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WAGE AND PRICE CONTROLS: A THEORETICAL ANALYSIS AND AN EXAMINATION OF THE BRITISH EXPERIENCE

by

© JONATHAN M. WILBY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND

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ABSTRACT

In the present environment of concurrent high inflation rates and high unemployment many have argued there is a need for policies to either complement or substitute for traditional measures of demand restraint. The alternative which is most commonly suggested is that of wage and price controls and it is these which form the subject matter of this thesis.

Any attempt to analyze the role of wage and price controls must come to some understanding of the causes initiating and perpetuating the inflationary process, for it is the desire to ameliorate inflation and/or the related problems it gives rise to which are instrumental in leading to controls. Furthermore, as will be argued in this thesis, the success or failure of controls is to some extent determined by the nature of the inflationary process. For these reasons a fairly extensive analysis of the inflationary process forms the first main topic with which the thesis deals. Having concluded the analysis of inflation and a brief examination of the methods, other than wage and price controls, which can be used to cope with that phenomenon attention is turned to the second problem which is the role wage and price controls can play in ameliorating inflation (and possibly unemployment as well). Although the earlier analysis argues that the most important cause of inflation is excess demand it is further argued that there may

be a variety of other causes operating as well; for this reason this second section attempts to analyze the role controls can play in dealing with inflation of different kinds. The reader will note that the conclusions drawn differ substantially from those most prevalent in the literature.

A policy should not be evaluated purely on the benefits it may bring; the costs associated with that policy should also be analyzed. This is the third problem which the thesis attempts to come to terms with. The thrust of this section suggests that although the costs most usually attributed to controls are in some cases overstated, there are other costs, which are often neglected, which should be taken into the reckoning before deciding whether or not to impose controls.

This third problem concludes the first, and theoretical, part of the thesis. The second part deals with two empirical aspects of controls, particularly as they have been applied in Britain. The first is the affect controls have had in reducing the rate of inflation, and deals with a variety of econometric assessments which have been made on this subject; the second is the way controls have been used in Britain and involves a fairly extensive discussion of such matters as the economic background in which controls have operated. The reader will note that many of the points made in the first part of the thesis were indeed relevant

in period of controls and this message will be further emphasized in the concluding section.

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CHAPTER I

THE INFLATIONARY PROCESS

The introduction of wage and price controls has invariably been occasioned by the desire to reverse the tides of inflation. While many would see controls of some form as desirable in order to create a more even distribution of income (a consideration which will be looked at later), and indeed this seems to have been one of the aims of some periods of control, it is with the purpose of controlling inflation, and perhaps the related balance of payments problems (in a fixed exchange rate regime) that periods of controls are instituted. This being so it would seem necessary to come to an understanding of the causes initiating and perpetuating the inflationary process, for until this is done it is impossible to see whether even a potential role exists for controls. It is with this purpose in mind that this chapter is written.[1]

1.1 The Relationship Between Demand Pressure and Wage Inflation

One of the most influential papers in the study of inflation in general and wage determination in particular was written by Phillips.[2] This coupled with Lipsey's later, more theoretically based, paper sparked off a massive volume of literature, both empirically and theoretically orientated,

which has attempted to come to terms with the subject of wage determination. Although it seems clear now that the Phillips curve, as originally hypothesized, is an inadequate specification, it can also be argued that it is important to an understanding of the inflationary process, and that this is so even if there is no long run trade off between inflation and unemployment; this point will be pursued somewhat later. Most importantly, the Phillips paper is still useful to an understanding of one determinant of inflation (often seen as its primary cause), namely excess demand.

Phillips' article was an attempt to show empirically that a stable relationship existed, and had existed (the study dealt with the period 1861-1957), in Britain, between the rate of change of money wages and the level of unemployment. In particular, the lower the level of unemployment the higher was the rate of wage inflation. Given such a relationship and given also a relationship between the rate of change of money wages and inflation - the usual one is that the latter is equal to the former minus the rate of increase of labour productivity - it can be seen that the authorities can choose either a desired level of inflation or a desired level of unemployment, but in general not both. In the British case, for example, it seemed that an unemployment rate of about 2 1/2 % would lead to a zero inflation rate; this rate of unemployment monetarists would term the natural rate.

Lipsey's paper[3] followed two years after that of Phillips. In part it was an attempt to show the existence of the Phillips curve using more conventional econometric techniques and in part it was an attempt to provide a theoretical rationale for that relationship. For although it is clear that Phillips thought the relationship could be explained in terms of excess demand there was no rigorous attempt to do so.

Lipsey started by considering a single micro labour market. He argued that adjustment to disequilibrium in such a market would take place by the Walrasian process of price adjustment. Thus, if there exists positive (negative) excess demand in that market the price of labour will rise (fall) and the greater the degree of positive (negative) excess demand the larger will be the rise (fall) in the wage rate.

Excess demand however is unobservable and thus a proxy must be found. Lipsey suggested that such a proxy was unemployment. When there was positive excess demand it was argued that unemployment would be small and when there was negative excess demand it was argued that unemployment would be larger. Given that wage rates do respond to excess demand as suggested above and that the relationship between excess demand and unemployment is that described, we can now see that there will exist a Phillips curve for each micro labour market. Using a number of assumptions (e.g. the $\dot{w} = f(u)$ reaction function is identical in each market, where $\dot{w}$ is the proportional rate of increase in money rates, and u is the

unemployment rate), Lipsey obtained a macro Phillips curve which he argued would in general be displaced above the various micro functions; the reason for this is related to the fact that the micro Phillips curves are strictly convex with respect to the origin. The aggregation process is not considered here (it is dealt with in detail by Peston[4]); rather attention is focused on two other points.

The first deals with the relationship between excess demand and unemployment. Although it would seem intuitively obvious that the relationship is as described, there is no theoretical reason why this should be the case. This is because excess demand has two counteracting effects on the rate of unemployment. First, positive excess demand implies a higher quit rate (this is contrary to the predictions of some search models), which will tend to raise the rate of unemployment. Second, positive excess demand will shorten the period of transit between jobs, which will lower the rate of unemployment. Theoretically, one cannot say which effect will dominate (this being the point Laidler and Corry[5] made when they spoke of a possible perverse relation); however, as an empirical matter it seems that the latter effect is the stronger. Therefore, although the Phillips curve may be a special case, it is, as Lipsey[6] points out, the empirically relevant one.

A second point is related to the use of unemployment as a proxy for excess demand. It can be shown with a simple supply and demand model for the labour market, that the

"correct" measure for excess demand is the vacancy rate minus the unemployment rate (this is assuming the vacancy rate is defined as $\frac{V}{E+U}$, where V is the number of vacancies, E the number employed and U the number unemployed). However, if it is assumed that the relationship between the two is stable, for example uv = J where u is the unemployment rate, v the vacancy rate and J is a constant, one can then substitute for v and get excess demand in terms of u; since uv = J, therefore $v = \frac{J}{u}$, but since in addition X = v - u it also equals $\frac{J}{u} - u$.

The question then arises as to whether the relationship is as described. Two cases where the relationship may be more complex are discussed here. The second in particular is important, for reasons which will become apparent in a later chapter. Various authors, e.g., Phelps[7] and Hansen[8] have argued that the uv relationship, although stable over the long run, is subject to short run variations during the course of the cycle. In particular, there will be clockwise loops around the uv curve with u x v being greater in periods of rising unemployment and less in periods of falling unemployment. If in fact this is the case, the anti-clockwise loops Phillips and others noticed around the Phillips curve can be explained in this way (for the unemployment rate will understate the level of excess demand in periods of falling unemployment and will overstate it in periods of rising unemployment). The second case arises in the event of structural change. It has been observed that the (short run)

Phillips curve has become more unfavourable in recent years, perhaps, in part, due to more generous unemployment benefits. There seems to have been an outward shift of the uv relationship with the concomitant result that unemployment has often fared badly in the wage equation (for example, Parkin, Sumner and Ward[9] find unemployment to be insignificant between 1966 and 1971). This then suggests that modifications to the original specification are in order, such as the use of the vacancy rate, and indeed in some cases alternative specifications have been used.

In summary, there seems to have existed a Phillips curve relationship for a significant period in Britain, and a theoretical rationale for this phenomenon was provided by Lipsey. There have been some difficulties in obtaining a stable relationship however, the first relates to the use of unemployment as a proxy for excess demand and was discussed above, the second relates to the apparent breakdown of the Phillips curve in recent years. This latter point will be discussed below in some detail.

1.2 The Relevance of Inflationary Expectations

The Phillips curve gained an important place in macro-economic theory in the 1960s and it is not hard to understand why. In the first place the relationship seemed intuitively obvious, though one might be a little sceptical of a curve which suggests that long run disequilibrium is the norm in the labour market, see D.F. Gordon.[10] Further,

the Phillips curve also seemed to provide the authorities with a clear cut policy choice, for either they could attempt to maintain low inflation at the cost of high unemployment or they could attempt to maintain low unemployment at the cost of high inflation (or alternatively they could aim for moderate levels of both policy variables). Finally, the Phillips curve provided a marked improvement on previous attempts to link unemployment and inflation, for example, the L shaped curve suggested by the Keynesian inflationary gap model.

It is not surprising therefore, that the Phillips curve became so widely used. Yet, as previously noted, while the curve appeared to explain the process of wage determination in the earlier periods it seemed less successful in explaining that process in the late 1960s. Part of the explanation was a shift in the Phillips curve (or more precisely of the natural rate of unemployment), part however had another explanation. In two independent articles by Phelps[11] and Friedman[12] it was argued that the Phillips curve was based on a mis-specification. These authors pointed out that the Phillips curve, as originally specified, assumed that transactors made their wage bargains without regard to the inflation rate; in other words it seemed to be assumed that an inflation rate of 100 %, would, at a given rate of unemployment, not lead to a higher wage bargain than a rate of 9 %. Such an assumption however does not accord with traditional micro-theory, (or common sense for that matter),

for micro-theory assumes that transactors are rational and therefore that demand and supply functions will be independent of the absolute level of prices (homogeneous of degree zero in absolute prices). Phelps and Friedman felt this almost axiomatic part of micro-theory should be paralleled in the dynamic world of the Phillips curve and, with this in mind, asserted that because transactors are rational, the curve should be a relationship between unemployment and the rate of change of real (not money) wages. Similar hypotheses had been suggested by other writers (Wallich, Von Mises, Fisher, Lerner) and indeed both Phillips and Lipsey used an inflation variable in the wage equation. (The interpretation was related to wage push and is thus different from that given above). However, it was Phelps and Friedman who first applied the concept of inflationary expectations to the Phillips curve. The effects of including this variable will be outlined below.

A typical specification of the Phillips curve in the 1960s was the following: $\overset{*}{w} = a + bu^{-1}$, where $\overset{*}{w}$ is the rate of change of money wages, u is the unemployment rate and a and b are parameters. Friedman however suggested that the proper specification should be $\overset{*}{w} = a + bu^{-1} + p^{e}$, where p^{e} stands for price expectations[13] (these are just the fundamental variables; Phillips curve equations often included other variables as well). These expectations, it is argued, will be based, in some way, on the behaviour of the price level in previous periods (the precise manner will

be discussed later) and if incorporated with a coefficient of unity - as both Friedman and Phelps would suggest - the Phillips curve in the long run will be vertical. An initial increase in demand, by raising prices, will lead to higher wage bargains. As long as unemployment is kept below that level consistent with stable prices (this rate will henceforth be called the natural rate of unemployment), expectations will always be falsified by a measure of unanticipated inflation and eventually the inflation rate will approach an infinite level. Because the inflation rate is constantly accelerating such a view is known as the "accelerationist" hypothesis.

The idea of the previous section can be stated in a different way. Essentially, starting from equilibrium, an increase in demand will lead to a temporary shift along the short run Phillips curve until inflationary expectations have adjusted. When this adjustment had taken place there will be a movement to a higher Phillips curve which will be followed by movements to continuously higher Phillips curves as inflationary expectations are revised upwards. Thus we have a sequence of short run Phillips curves, one above the other, each curve representing a certain level of inflationary expectations. If, however, nominal money demand is not continuously expanded higher wages will eventually lead the economy back to the natural rate of unemployment; at this point the actual and expected rates of inflation are equal. The overall path of $\dot{w}$ and unemployment will be represented

by a clockwise loop which in fact will dominate the anti-clockwise loops mentioned earlier.

In the process described in the previous paragraph unemployment cannot be sustained below a certain rate except by a continuous expansion of monetary demand. Such conclusions however depend crucially on the assumption that the expectations variable enters the wage equation with a coefficient of unity, i.e., there is no money illusion. If money illusion of some order exists there will be a long run as well as a short run trade off; in the case of complete money illusion we are of course back to the original Phillips curve. Many have argued that it is likely there is some degree of money illusion (for example, Solow, Rees, Peston) and in consequence suggest that a long run trade off, albeit much less favourable than the short run trade off, does exist. Although early evidence gave some support to such a view more recent evidence, as Santomero and Seater[14] point out, has tended to be in favour of the "accelerationist" hypothesis; often authors have found the coefficient on price expectations has been revised upwards towards unity in recent years (see Gordon[15]). It is also worth pointing out that there may be reasons why the coefficient has been subject to downward bias (see for example, Sargent[16] and Saunders and Nobay[17], etc.). Whatever the truth is, and it should be remembered that a lot of the econometric work can be criticized for using incorrect estimation methods (see Rowley and Wilton[18]), it seems clear that any trade off which does exist will be an

unfavourable one and that the possibility of increased sensitivity of expectations to high rates of inflation and of substitution away from monetary assets makes reliance on such a trade off a dangerous option.

1.3 The Impact of Monetary and Fiscal Policies

So far the analysis has dealt with inflation in terms of the concept of excess demand. It has been argued that (positive) excess demand is the cause of inflation without specifying how that excess demand arises. In other words we seem to be in a world of "Hamlet without the prince" and it would seem high time to look at the causes of excess demand.

Essentially, the government has two main tools for influencing the level of demand, the first being monetary policy, the second fiscal policy. Emphasis on their relative importance has been the focus of considerable debate (see for example, Stein[19]) and is still somewhat in doubt, although it seems to be agreed by most economists that monetary policy can be an extremely potent force and that fiscal policy also has some role to play. At one time it was argued that monetary policy was of little value because (a) there exists infinite interest elasticity of the demand for money (b) assets can be substituted for money with ease and (c) the real sector does not respond to monetary forces; few would subscribe to such arguments nowadays. As regards (c) most studies have found monetary policy does affect investment

(Laidler[20], who discusses these matters much more fully points out that the evidence of many econometric studies is however severely flawed) and also consumption; further, savings have been found responsive to interest rates. As regards the other two criticisms there is considerable evidence (though much is subject to simultaneity bias) to suggest that the demand for money is a stable function of a few variables - typically some measure of income or wealth, the interest rate and the expected rate of price inflation. Further it has been found that the demand for money increases nearly proportionately with an increase in income, thus velocity (given no change in fiscal policy) is fairly stable in the long run.

Some (for example, Kaldor[21]), have argued that the stability of the demand for money has been illusory, contending that the apparent stability has been due to the passive response of the money supply; in other words the money supply is seen as endogenous and not exogenous. Monetarists (and others) in reply have argued that evidence suggests that changes in the money supply have preceded those in demand. However, while such a view seems convincing in the U.S. where the authorities have always had considerable control over the money supply, it seems less convincing in the British case (under fixed exchange rates), where, according to the monetary theory of the balance of payments, the money supply was largely, if not completely controlled by the demand for money. More convincing is work which looks

at the direction of causation from the point of view of the world, for example, Genburg and Swoboda (quoted in Parkin[22]) find that "changes in the world money stock have on the average preceded changes in both world income and the world price level during the last decade and a half".

Turning attention now to fiscal policy, there seems to be considerable evidence that fiscal policy does not just crowd out the private sector. On the one hand it has been shown in almost every equation of the demand for money that interest rates have some explanatory power, though nowhere near that suggested by the liquidity trap, (Laidler,[23] writing in 1969, considered the evidence of interest rate elasticity the most certain thing in monetary economics); on the other almost all econometric studies have shown an important short and medium run effect on demand can be attributed to changes in fiscal policy. As Blinder and Solow[24] point out, the only study that predicts complete crowding out is that of the Reserve Bank of St. Louis, a study which is subject to a number of faults (for example a poor measure of fiscal policy). It can therefore be concluded that fiscal policy does affect demand and will cause a once and for all change in velocity.

I now wish to integrate the above into a discussion of the augmented Phillips curve. Assume initially that the economy is at the natural rate of unemployment and furthermore that inflation is at zero per cent. An increase in the

rate of growth of the money supply will lead to an increased rate of growth of output, however, in the absence of money illusion, this will be but temporary and eventually unemployment will return to the natural rate, only it will now be accompanied by a positive rate of inflation. This rate of inflation will, assuming constant velocity, be equal to the rate of growth of output. Therefore, an increase in the rate of growth of the money supply can alter the unemployment rate in the short run, but, in the absence of money illusion, cannot do so in the long run - put another way the LM curve is initially shifted downwards to the right, but in the long run (if both y and r are in real terms), will move back to its original position. To maintain unemployment below the natural rate requires not only that the rate of money growth is increased but that it is continually increasing.

The argument above suggests that at some rate of unemployment, and only at that rate, can a constant rate of inflation prevail, furthermore, this rate of unemployment will be invariant to the inflation rate (some would modify this latter conclusion). It is argued that any deviation from this rate will lead to either accelerating or decelerating inflation which can only continue as long as monetary (or possibly fiscal) policy becomes progressively more lax or restrictive. In other words there exists a vertical long run Phillips curve. Various underpinnings of this theory have come into being and we now briefly consider one of these - search theory.

1.4 Search Theory

The principal aim of search theory is to make consistent the neoclassical world, where, according to Phelps[25], "Inflation has no tendency...to stimulate output" with the Keynesian world where output and employment are affected by changes in the money supply. The reconciliation is brought about by the recognition of real world ridigities, notably those of information; and the theory can thus be seen as an extension of Leijhonhufvud's interpretation of Keynes.

Search theory, popularized by Phelps' well known book, assumes that it is costly for workers to acquire information about the pattern of wages, and they can do so only through an investment of time. Further, it is argued that it is this attempt to acquire information which often leads workers to quit their jobs. Through a search process they are supposed to learn what the state of the labour market is and to adjust their reservation wage in accordance with the information they collate (thus in a period of low unemployment the reservation wage will be raised).

To make the implications of the theory clearer (it is treated here as a homogeneous theory though it is clear there exist several variants), I shall now outline the scenario resulting from the introduction of more permissive monetary policies. An initial expansion of demand (from the natural rate of unemployment), will lead

to shortages of labour, and in consequence employers will bid up wage rates. Workers are supposed (due to lack of information) to believe that this general rise in wages and prices is a specific rise and in consequence offer more labour. As time goes on, they realize wage rates in general have risen and revise their expectations upwards so that eventually the expected and actual rates of wage change be equal. At this point employment will return to the natural rate. In the case of more restrictive demand policies the opposite will occur, there will be a temporary decline in the labour supply as workers mistake a general decline in the price level for a decline in their own market value; and therefore the quit rate will temporarily rise.

Such models explain the "accelerationist" hypothesis, and in a rather different way to that given previously. Furthermore (as will be discussed later), they give some explanation of why the natural rate of unemployment is not zero - for a zero rate is what pure neoclassical theory would suggest. Search models are however subject to a number of faults; some of these will be briefly outlined below:

1) There is a tendency present in certain search models (for instance that given above) to predict that the quit rate rises as unemployment rises and falls when unemployment falls. Empirical evidence, as pointed out earlier, suggests the opposite is in fact the case. It should though be noted that this is not a criticism of search theory, as such,

but of certain types of search model (e.g., those by Alchian and Mortenson).

2) There is a tendency to assume that an increase in the wage rate will lead to an increase in the amount of labour supplied, it may be however the opposite in fact occurs, i.e., the supply curve for labour is backward bending.

3) Some (for example, Gordon[26]) would also argue that search theory underestimates the knowledge workers do have of other workers' wages. Phelps "Island Parable" is an extreme example here (and was not intended by the author to be entirely reflective of the real world); Mortensen's paper however is based on a similar line of thought. In practise it may well be that workers have at least some knowledge of other workers' wages and the fact that a lot of search activity is known to take place while the worker is still holding a job, only lends support to such a view.

4) There seems to be a class of rigidities which search models do not take into account. In particular, there may be a much lower response of wages to negative excess demand than to positive excess demand. This point will be pursued at a later juncture.

5) Finally, and in many ways related to the previous point, search theory seems unable to explain involuntary unemployment. It is clear from the

search literature (see for example, Phelps[27] who categorizes unemployment into four kinds; all voluntary) that unemployment is seen as a voluntary activity and such is out of place with the real world. For this and the previous reasons I would tend to reject the main thrust of search theory while recognizing the theory offers many insights concerning the operation of our economic system.

1.5 The Mode of Expectations Formation

(a) Adaptive Expectations: Expectations have so far been mentioned several times during this chapter. Little however has been said on how they are formed. One popular model of expectation formation, originally used by Cagan[28] in his study of hyperinflation, is that of adaptive expectations, and indeed expectations of this kind are implicit in the seminal articles of Phelps and Friedman (cited earlier). Essentially, adaptive expectations are expectations formed from a weighted average of past inflation rates with weights declining over time (in empirical work Koyck lag techniques are used with the weights summing to unity - an assumption which has been criticized by Sargent). Most, though not all models, are based on some type of first order process, typical examples are the following: $p^e_t = p^e_{t-1} + \lambda(p_t - p^e_{t-1})$ and the unlagged version $p^e_t = p^e_{t-1} + \lambda(p_{t-1} - p^e_{t-1})$, where p_t is the inflation rate at time t, p^e_t is the expected inflation rate at time t and λ is a positive parameter.

Adaptive expectations then are expectations formed purely by observation of inflation rates and take into account no other information; further, the exact form modelled seems to be somewhat arbitrary. These assumptions seem somewhat strong and will be dealt with below.

(b) Rational Expectations: Since adaptive expectations are based purely on past rates of inflation they assign no role to monetary or fiscal variables (or indeed to other variables such as the exchange rate). In recent years the use of adaptive, or autoregressive, expectations in models has been very forcefully criticized for just these reasons, and, given the importance of the issue, it is worthwhile discussing the alternative the critics (e.g., Sargent, Wallace, Lucas and MacCullum) suggest. These authors note that the assumption of adaptive expectations is essentially an ad hoc one, and that it implies transactors take into account only a subsection of the information available to them. Furthermore adaptive expectations will lead to serial correlations of errors, for, as has previously been argued, transactors will be continually "fooled" if monetary policy becomes increasingly more lax or restrictive. Thus, although adaptive expectations assume a higher degree of rationality than the original Phillips curve, they do not assume complete rationality and rationality is at the very heart of much of economic theory. For this reason an alternative is suggested whereby the consumer is presumed to use all the information

available to him; the consequences, as will shortly be seen, are quite startling.

This alternative, rational expectations, argues that expectations, in the words of Muth, (quoted by Shiller[29] who gives a much fuller discussion of rational expectations), "are essentially the same as the predictions of the relevant economic theory" and further, as Shiller states, are "true mathematical expectations of the future variables conditional on all variables in the model which are known to the public at time t". Put simply, the logic is as follows: transactors, who know the structure and the parameter values of the relevant macroeconomic models, and who realize the importance of monetary and fiscal policies, will base their expectations not on some weighted average of past inflation rates but on these very variables themselves.

A number of implications can now be stated. The first is that any preannounced change in the money supply will be reflected in a one for one rise in prices even prior to its enactment. Thus money is neutral even in the short run (excepting for the fact that no interest is paid on demand deposits), and not only is the long run Phillips curve vertical but so too is the short run Phillips curve. A further implication is that any feedback monetary rule, when learnt by the public (and this may take some time), will again have no effect on output even in the short run. This can be shown using the following example given by

Gordon.[30]

1) $u_t = u_t^n - \frac{1}{B}(p^t - p_e^t) + y^t$, where u is the unemployment rate, u^n the natural unemployment rate, p^t the inflation rate, p_e^t the expected inflation rate and B a parameter. The equation implies that unemployment differs from the natural rate (excepting an error term - y), only by the extent the actual and expected inflation rates diverge.

2) $p_e^t = E(p^t/I^{t-1})$, where I stands for the information known by transactors. The implication here is that price expectations are based on the information available to transactors.

3) $p^t - p_e^t = p^t - E(p^t/I^{t-1}) = e^t$. The expected and actual inflation rates differ only by a random error term e.

4) $p^t = m^t + y_s^t$. The actual inflation rate is equal to the rate of growth of the money supply (m) plus an error term.

5) $p_e^t = m_e^t$. Price expectations are based on the expected rate of growth of the money supply.

6) $m^t = a_0 + a_1 (u_{t-1} - u_{t-1}^n) + y_m^t$, where a_0 and a_1 are parameters and y_m is an error term.

7) $m_e^t = a_0 + a_1(u_{t-1} - u_{t-1}^n)$. The authorities are using a simple feedback rule (excepting for the surprise component), and this is known to transactors.

8) $m^t - m_e^t = y_m^t$ thus $p^t - p_e^t = y_m^t + y_s^t$, and substituting back into equation 1: $u_t - u_t^n = y^t - \frac{1}{B}(y_m^t + y_s^t)$. Thus deviations from the natural rate are a "random walk" and monetary policy has no systematic effect on output.

These conclusions are very powerful ones and for reasons which will be more apparent later are against the approach taken in this thesis. For this reason it is worth spending some time on suggesting possible criticisms of the rational expectations approach. A number of potential criticisms are outlined below.

1) A first criticism might be that if the authorities can use the surprise term (y_m^t) they will be able to influence output. Although there is some evidence to suggest unexpected changes in the money supply are important (see for example, Barro[31]) it is likely that any attempt to surprise the public can only be successful, at least given the assumption of rationality used above, if it is done infrequently.
2) Another attack on the strong implications outlined above, would argue that although transactors do form their expectations rationally, this does not mean demand policy is impotent. The argument, which has been developed by Phelps and Taylor[32] on the one hand and Fischer[33] on the other, proceeds as follows. Assume that there is an increase in the rate of growth in the money supply, this will lead to a one for one change in inflationary expectations, however in the real world there are binding work contracts (which themselves arise for rational reasons). For this reason until the contracts are terminated wages cannot be adjusted as workers desire and demand

policies will have an effect on output.

Undoubtedly given its assumptions this argument is correct. What however has to be explained (and this point is noted by Fischer), is why there is not a movement towards shorter and shorter work contracts, for, if expectations were rationally formed, transactors would realize the costs involved (as well as the benefits), of fixed contracts. Thus the Fischer and Phelps and Taylor papers might constitute an attack on the strong rational expectations conclusions in the short run; it is not clear that they do so in the long run.

3) It could also be argued that it may be difficult to acquire the rather large amount of information necessary to form expectations rationally. For example Sargent (as noted by Shiller[34]), requires transactors to have knowledge of the money supply, the government surplus, the GNP deflator, a straight time wage index, nominal and real government expenditures. Once it is realized there are costs (time for example is a scarce commodity), as well as benefits associated with collecting such information it may well be that rational expectations, as defined by Muth, are not really rational after all. The truly rational transactor is, as Feige and Pearce[35] point out, somebody who collects information until the marginal costs of doing so are equal to the marginal

benefits. This may or may not imply that monetary and fiscal policies have an effect on output.

4) A final and to my mind fundamental argument suggests that the rational expectations hypothesis considerably overstates the intelligence and knowledge which transactors possess. As normally applied the hypothesis requires transactors not only to know the relevant economic theory but also the structural parameters of the system. While it is not knownhow much information transactors do have, it is unlikely they know the structural parameters of the system, (economists themselves must estimate these), and it is far from obvious that they even know the relevant economic theory. To my mind, at least, it seems most unlikely that agents have knowledge of the relevant economic theory, or, even if they do, know how it should be used to formulate expectations. This seems all the more likely for it has only recently become clear to economists that rational expectations are the optimal method of expectation formation.

These are two possible replies to the above. The first would argue that although the "man on the street" may have insufficient knowledge to form expectations rationally this is not so of trade unions, and, at least in Britain, it is these that have the major hand in the process of wage determination. The difficulty here is that unions, in Britain at any rate, appear not to espouse monetary theories

of inflation (for example they tend to support expansionary policies), rather inflation is generally blamed on profit push, and so although they may be in a position to formulate rational expectations, it is hard to see why they should do so.

The second reply proceeds as follows. The test of a theory should not be based on the assumptions of the theory (for assumptions can never be completely realistic), rather it should determine whether the predictions fit the evidence. In the case of the rational expectations hypothesis however, the evidence does not suggest clear cut conclusions. In the first place, certain evidence seems unfavourable to the whole approach, for example Hall[36] finds unemployment to be highly serialy correlated whereas it should be a random walk around the natural rate of unemployment (see however, Barro[37]). In the second place, as Shiller[38] points out, many of the tests, which allegedly support the rational expectations hypothesis, are too weak to draw firm conclusions from. Given these points and given also that models using adaptive expectations seem to have performed reasonably well, the somewhat implausible assumptions made by the rational expectations hypothesis imply, to me at least, that its conclusions should be treated with caution.

(c) Estimated Expectations: It seems that neither the assumptions of adaptive or those of rational expectations are entirely convincing. The former is completely ad hoc

while the latter seems to assume a degree of knowledge which is probably not possessed by most transactors. An alternative approach is to estimate from empirical data what people's expectations are - in other words it is the data, and not the economist, which decides how expectations are formed.

A number of economists have been somewhat sceptical of this approach (some indeed have attacked survey estimates because they imply serial correlation of prediction errors), however, even given the difficulties involved in such methods, and there certainly are difficulties involved, it does seem to me the preferred procedure. As far as Britain is concerned only one collection of data has been made, that by Parkin and Carlson[39]; this will be considered in a later chapter. In fact it is the paucity of such data that leads this thesis to a reliance on the adaptive expectations hypothesis.

1.6 The Natural Rate of Unemployment

A brief discussion of the determinants of the natural rate of unemployment is in order here. One approach, that of search theory, sees this rate as being essentially determined by information costs. As mentioned previously, workers are supposed to take time in acquiring information about the wage structure prevailing in the economy, and the more imperfectly informed is the labour market (for instance the market for teenagers is likely to be relatively poorly informed), the longer such a process takes. This constitutes one component of the natural rate; there are however others

as well. One such category is that of workers who are unemployed for leisure purposes (this is termed by Phelps "wait" unemployment), and this may have become an increasingly important category in Britain in recent years as unemployment benefits have been improved. Other categories are marginal workers made redundant by minimum wage laws, or similar devices, those made unemployed by the demand shifts which take place in any dynamic economy and those who are technologically unemployed. The relative importance of these categories will not be discussed here, however, it would seem that minimum wage laws, for example, cause considerable unemployment at the younger range of the age scale.

It can be seen that that the natural rate of unemployment consists of a variety of components. These, however, have one thing in common and this is that they come about through real forces and are independent of monetary and fiscal policy. This implies that demand management cannot influence the natural rate of unemployment. This does not, however, imply that the natural rate is in any sense immutable, for it can be affected by a variety of policies. The following are just some of the many policies which have been suggested could be used to lower the natural rate: lowering the minimum wage, improving manpower policies, taxing unemployment benefits, and more generally improving the dissemination of information throughout the economy (for a detailed discussion of the issue, see Holt[40]).

1.7 Inflation in an International Context

The analysis so far has been based on the assumption of a closed economy. It is now time to relax this assumption and to recognize that we live in a world of open economies operating under either fixed or flexible exchange rates (the present regime in fact is one of managed flexible rates). It will be seen that the relaxation of the assumption of a closed economy leads to results considerably different to those described above.

We start by looking at a world of fixed exchange rates and with an extreme model - which Marina Whitman[41] entitles global monetarist. This model assumes that in both the goods and the asset markets the law of one price holds, even in the short run. A further assumption is that wages and prices are fully flexible. Finally it is assumed that the monetary approach to the balance of payments is correct which implies:

(a) that capital inflows or outflows cannot be sterilized over a period relevant for policy purposes,

(b) that monetary processes play a key (and in some models the sole) role in determining the balance of payments. Further, money is a stock and not a flow and the demand for money is stable.

Given these assumptions a number of strong conclusions can be drawn; for example, a country can control its

own money supply only insofar as it can influence that of the rest of the world. If the supply of money is greater than the demand in any one country transactors will relieve their surplus cash balances by creating a balance of payments deficit. The deficit will continue until the actual stock of money balances is equal to the desired stock of money balances, at which point the capital outflow will discontinue.

In such a world devaluation is both unnecessary and useless. It is unnecessary because balance of payments deficits can be corrected simply by reducing the rate of growth of the money supply sufficiently to equate it with the demand for money, a process which will be painless given the assumption of perfect wage and price flexibility. It is useless, except in the short run, because, under the assumtion of the law of one price, a country cannot influence the relative prices of its goods (this is so for both traded and non-traded goods). To be sure there will be a temporary improvement in the balance of payments for the higher price level in the home country will increase the demand for money; however capital inflows will rise to satisfy this increase in demand, and, if the home authorities stance on monetary policy is unchanged, the deficit will soon reappear.

The assumptions above inevitably lead to powerful conclusions; conclusions which are very different to those suggested by the conventional Marshall-Lerner conditions. The conclusions however crucially depend, in many respects, on the assumptions and it will be argued many of these are

in error. Let us then look in turn at each of these assumptions.

The law of one price at one time was almost totally ignored but in certain recent literature it would almost seem to be treated as an identity. This latter view is certainly incorrect. In the first place, even if one assumes the law holds in the traded goods sector, it is not entirely obvious why it should hold in the non-traded goods sector. There are certain tendencies here for equalization (through demand shifts), however there are other tendencies for divergence (for example those suggested by the Scandanavian model, which will be examined later). Certainly one would suspect the former tendencies are weak; for example, as Fand[42] points out, there seems little reason why the price of haircuts should be the same in India and America.

In the second place there is considerable evidence that prices in the traded goods sector are equalized (in most instances) only in the long run (Lipsey and Kravis[43] give a number of examples of persistent long run divergences of traded goods prices even in the face of strongly changing market shares). In the short run it is likely that prices of most goods are determined by costs and not by world prices. In other words the traded goods market for most commodities is not perfectly competitive.

It is also worth noting that the law of one price does not hold completely over the asset market either. While

it seems to be the case that interest rates are, in large part, exogenously determined, there does seem to be some room for the home country to manoeuvre its interest rates under fixed exchanges rates (of course a country like the U.S. probably have considerable monetary autonomy even under fixed exchange rates).

The second assumption, that of perfect wage and price flexibility, is also in need of modification. In particular it seems prices and wages are far from flexible downwards. In fact it is difficult to explain why governments were so willing to resort to devaluation and so loathe to use revaluation under fixed exchange rates, unless the existence of rigidities is recognized. Were prices and wages fully flexible, adjustment to balance of payments disequilibrium could be easily achieved by appropriate manipulation of the rate of growth of the money supply.

The final set of assumptions, those based on the monetary theory of the balance of payments, seem more robust. Although it is clear certain countries were able to sterilize capital inflows (the usual example given is Japan), the assumption of no sterilization seems, in most cases, to be less objectionable than the assumption of complete sterilization used in some Keynesian models; certainly with regard to capital outflows. Further, the assumption of a stable demand for money does, as has previously been argued, seem in accordance with reality. One criticism of the monetary theory of the balance of payments might be that it concentrates too

heavily on monetary factors, almost to the exclusion of real factors. Put in this form the argument is unconvincing for the theory does allow for the influence of real factors (e.g. a faster rate of output growth), given that they operate through the money market. In a milder form the argument does however have some validity and certain exponents of the monetary approach, e.g., Dornsbusch,[44] have recognized non-monetary factors can affect the balance of payments even when they operate through channels independent of the money market.

Given these modifications it is worth asking how our conclusions are altered; I intend now to state in point form the new conclusions:

(i) Domestic monetary policy will not be completely impotent, as in the global monetarist world, indeed if capital mobility is low (which is doubtful), it is possible that a monetary injection can raise money and in all probability real incomes for a number of years. If capital mobility is high, but not perfect, the duration of these effects will be shorter; it will not however be zero.

(ii) Devaluation, in certain circumstances, may be a useful switching device (and here the concept of elasticities is relevant), for no longer is a reduction in the rate of growth of the money supply a painless affair. Devaluation can be effective either by making the price of some traded goods less than the world level (thus invalidating, at

least temporarily, the law of one price), or, if accompanied by restrictive monetary and fiscal policies, by causing a switch between imports and home goods (if restrictive policies are not used the increased demand and decreased production of home non-tradeables will lead to an increase in their price). It should be realized, however, that devaluation will lead to higher import prices and this may fuel inflationary expectations, thus a preference for devaluation rather than pure demand restraint would seem to rest on the existence of money illusion (although it is possible that devaluation because of its impartiality may be accepted whereas reduction in money incomes will not). This last point which is the subject of a paper by Ball, Burns and Laury[45] will be of some importance in a later chapter.

(iii) Since the law of one price does not hold, at least in the short run, price levels and inflation rates will not be equalized even if exchange rates are rigidly fixed. There are however, other reasons for inflation rates to be related in the long run, in particular international multiplier effects, monetary flows, multinational pricing and wage emulation. It is therefore likely that, at least over the long run (unless there is substantial money illusion), inflation rates will be linked and a country will have little scope in determining its own inflation rate. This does not necessarily mean there will be

a convergence to one inflation rate and a model will be presented below which suggests that although inflation rates are linked, they may very well diverge from country to country even in the long run.

This model, originally suggested by Edgren, Faxner and Odhner,[46] is what is commonly known as the Scandavian model. As initially formulated the model assumes that the law of one price holds in the traded goods sector, where, it is argued, most of high productivity industry is concentrated. In this sector, it is postulated that wage claims will be based on the rate of growth of labour productivity plus the rate of increase in the price of traded goods (which will be determined, in large part, by the growth rate of the world money supply). It is then argued that workers in the rest of the economy will, because they are interested in maintaining their relative wage, bargain for wage increases similar to those in the traded goods sector. The overall inflation rate will be a weighted average of the inflation rate in the traded goods sector and the non-traded goods sector (where the inflation rate in the non-traded goods sector is equal to that in the traded sector plus the labour productivity differential between the two sectors), with the weights determined by the relative shares of the two sectors in total output. The implication here is that the larger is the gap in productivity between the sectors and the higher the proportion of output produced in the non-traded goods sector the higher will be the rate of inflation.

A common criticism of cost push explanations of inflation (and this model has such elements), is that they do not take into account demand factors and in particular are incompatible with a world of fixed exchange rates. This model is not subject to such a criticism and the reason is simple to see. If a particular country, perhaps because of a higher productivity differential, experiences an inflation rate above the world average, its demand for money will increase and this will attract capital inflows to validate the cost push. Therefore Scandanavian models, though in general they have ignored demand factors, are quite compatible with the operation of these factors and this is so even if the demand stance of the home country is restrictive (given interest elastic capital flows); unless that is the home country can sterilize capital inflows.

Edgren, Faxen and Odhner used this model, with some success, to explain inflation in Sweden. Maynard and van Ryckeghen[47] find however that the assumption of the law of one price leads to rather poor results for most countries. In fact they discover that whereas export prices fell by 1.2 % per annum in Italy over the period 1954-68 they rose by 2.4 % per annum in France over the same period. In part these divergences can be explained by exchange rate adjustment (this is certainly so for France), and by different compositions of trade, though whether such explanations provide a complete account of these differences is not at all clear. Maynard and von Ryckeghen find that when disparities in the

inflation rates of traded goods are taken into account, the structural hypothesis has greater explanatory power and can help to account for divergences in inflation rates; not surprisingly, however, the explanatory power is nowhere near so great in a world of flexible exchange rates. A final point is in order here and this is that in recent years the trend setter for wage bargains, at least in Britain, may not have been the traded goods sector; rather, the public sector may have taken on this role. This will further reduce the explanatory power of the Scandanavian model.

1.8 Flexible Exchange Rates

In recent years most countries have adopted flexible exchange rates, or, more precisely, managed flexible exchange rates. While, in a fixed exchange rate regime, a country's policy options are severely circumscribed by the outside world, a move to flexible exchange rates gives a country far more room to manoeuvre. One implication here, which will be discussed later, is that wage and price controls can be more effective under flexible exchange rates, since the home country can now determine its own rate of inflation.

It was shown earlier that monetary policy would in general be relatively impotent in a world of fixed exchange unless the home country could influence the world's money supply. In this respect the case of a flexible exchange rate regime is quite different for now capital inflows and

outflows (which follow a monetary expansion or contraction) lead not to balance of payments disequilibrium but to adjustments in the exchange rate. This in turn will exert the desired expansionary or contractionary effects on aggregate demand and therefore, even if the law of one price does hold, monetary policy will be effective in influencing demand in a world of flexible exchange rates.

One should note however that the movements of the exchange rate make it likely that the real effects of monetary policy will be less enduring than in a closed economy, this is because inflation will be brought through direct channels (movements in the exchange rate) as well as indirectly through the labour and goods markets. This has a further implication and this is that, even if an increase in demand does have no influence on prices through the workings of the labour and goods markets (and this is unlikely), it will (ceteris paribus) do so through movements of the exchange rate. Therefore evidence that the Phillips curve is horizontal, or that goods market prices are unresponsive to demand pressures, are even in conjunction insufficient to justify expansionary measures, for inflation is still likely to arise through devaluation and its influence on inflationary expectations.

It has been argued that flexible exchange rates give a country greater independence in pursuing the policies it wishes to follow and indeed this extra degree of freedom is the usual justification given for flexible exchange rates.

I wish to argue here, however, that in practise the freedom afforded to a country is less than the above would suggest. Flexible exchange rates have typically led to large variations in exchange rates (for example, the yen climbed almost 40 % vis-à-vis the dollar in 1978) and it is probably fair to say movements of such magnitudes were not expected by proponents of the change. It appears that different stances in monetary policy can lead to very significant exchange rate fluctuations, and further, that, at least in the short run, exchange rates are affected quite significantly by peripheral events (newspaper articles, speeches, etc.). It also appears that exchange markets are "thin" and that the actions of one firm - especially when a large multinational - can noticeably affect the exchange rate. Finally, in the short run, it seems that devaluation may have a perverse affect on a country's balance of payments (the so called J curve is relevant here) and that speculators, influenced by this, further speculate against the devalued currency. For these reasons (and also because of the effect of exchange rate variation on prices) it may well be necessary to achieve some form of international cooperation in formulating stabilization policies; if this is found to be the case, the degree of independence given to a country is far less than purely theoretical considerations would suggest.

As a final point, it should be noted that, even if the exchange rate adjusts to just the right level (it is guided by rational expectations), and in the short run this

is unlikely, certain disturbances will not be completely neutralized. For example, while a rise in the world price level will have no effect on the home country, a world increase in demand for the home country's exports will have some effect and a change in the world's demand for the home country's securities will have an effect larger than under fixed exchange rates. Therefore flexible exchange rates can, at best, provide only partial insulation and cannot insulate a country from real shocks.

1.9 The Importance of Institutional Rigidities

Previous sections of this chapter have built up a theory of inflation which in many respects, is in accordance with monetarist views. Much of the rest of this chapter will deal with modifications, or suggested modifications, to this view. In particular, it will be argued that there are important institutional rigidities to consider which may imply that the short run Phillips curve is fairly flat at high levels of unemployment. Further, it will be argued (and this is in part related to the previous point) that trade unions may, in some circumstances, have an important role to play in the inflationary process.

In recent years a number of authors have argued (Gordon[48] and Okun[49] for example) that changes in the money supply may have substantial and prolonged effects on employment and output when unemployment is above the natural rate, a view much at variance with the rational expectations

hypothesis. In its most extreme form this view would argue that the Phillips curve is horizontal above the natural rate (which is similar to the views of extreme cost push theorists excepting that these would consider the Phillips curve to be horizontal for all levels of unemployment) or alternatively that expectations are so unresponsive to decreased demand that in a sense there is a stable long term trade off. A more moderate view would argue that, although deflationary policies will eventually succeed in their aim, the road is a long and hard one. For the case of the U.S., at least, considerable econometric support exists for such a view, Okun[50], for example, found seven studies all suggesting that high unemployment rates would have to be maintained for several years to achieve low, let alone zero, inflation rates - it is worthwhile mentioning that all of the studies are consistent with the natural rate theory.

Since this thesis aims to look at the effects of price and wage controls in the battle against inflation the above seems to be important in a discussion of such policies. Were the inflation rate as responsive to changes in the rate of growth of the money supply, as monetarists seem to suggest, there would be little point in introducing policies which must, to some extent at least, distort the allocating mechanisms of the economy. Given that inflation is fairly unresponsive to reductions in demand, at least over the short run, one is much more likely to consider wage and price controls as a useful form of policy, though such unresponsiveness in itself is

insufficient reason to introduce controls. In what follows, I shall try and look at these downward rigidities in more depth and to suggest possible explanations, for, without some understanding of their causes, it is difficult to predict whether they are a permanent feature of economies or a temporary aberration.

One explanation of downward inflexibility of real wages (for real wages will decline in the short run) is based on what is known as contract theory. It is argued that workers are more risk averse than employers (the latter by their very nature take a more positive attitude towards risk), and further, that either explicit or implicit contracts exist between the two groups which lead to certain modes of behaviour. From this it is argued that firms will maximize profits by reducing the variability of workers income.

There are two difficulties here; the first is that such practises would seem to imply that wages show upward as well as downward rigidity, yet upward rigidity seems far less marked. The second is that there is also a risk involved in unemployment and unless workers prefer one risk to the other (one rationale is that the risk involved in unemployment is preferred because leisure has some value) the theory is inadequate to explain downward rigidity. Even if leisure has value to employees the theory still has problems, for, as Gordon[50] states, "When symmetric demand fluctuations are allowed, the hours of leisure foregone in high periods outweigh the less valuable hours gained in low demand periods

and tilt the balance back to a fixed income contract."

A second argument which explains downwards wage rigidities but which does not imply upward wage rigidity is the following. Wage cuts, or smaller wage increases, will lead to a rather uncertain reduction in the wage bill, for the firm cannot predict how many workers will quit in consequence. On the other hand, layoffs (which seem to be predominantly a very short term phenomena, in the U.S. at least) reduce the wage bill by a certain amount simply because the firm can decide who to layoff. Furthermore, the latter gives the firm the opportunity to retain its highly trained staff and to lay off those less trained bodies whom it values less highly (implying that there are fixed costs, as well as variable involved, with some categories of labour). For these reasons lay offs may seem, to the firm, a preferable technique to cutting wages.

A possible attack on the above argument could run as follows. The attractiveness of the lay off means that in the short run quantity changes are more important than price changes. In the long run, however, it could be argued that those workers who are subject to lay offs will bid down the wage rate by trying to get jobs below the going rate. There seem to be a number of reasons why this does not occur. In the first place, many lay offs are temporary - Feldstein[51] points out that in the U.S. in 1971, about 85 % of workers laid off in manufacturing firms were rehired by the same

firms. Secondly, attempts to undercut present wage rates are likely to be subject to resistance on the part of already employed workers whether unionized or not. Thirdly, if unemployed workers could bid down the wage rate the firm would be faced with the uncertainties layoffs were designed to avoid. Finally, it may be, as Solow[52] suggests, that workers just do not do things like undercutting other workers wages.

The above argument implies that the short run Phillips curve is fairly flat in certain ranges and the fact that it may be vertical in the long run does not necessarily imply a painless adjustment process. It is also possible that there may exist asymmetries (or apparent asymmetries) in the expectation formation process. Less work has been done here, but it is possible that the long periods of expansion since the war have led to patterns of wage bargaining based on the expected perpetuation of such an expansion. Furthermore, there may be, as Scarfe[53] points out, ratchet effects in the formation of expectations, for example the highest rate of inflation may enter as an argument in the price expectations function. Finally one wonders whether expectations would ever adjust sufficiently to lead to a negative inflation rate (and how long it would take were they to do so) - if only because negative rates have not been experienced within many people's living memory.

1.10 The Role of Trade Unions: A Discussion of Theoretical and Empirical Aspects

It is often argued, particularly, but by no means always by laymen, that trade unions are the fundamental cause of inflation. The following section will attempt to evaluate this view in a variety of ways. Initially, I shall look at the theoretical credentials of cost push theories focusing on a number of objections often cited by monetarists. Then, I shall examine some specific theories which have been suggested, following which I shall present a more general theory which I feel combines the best aspects of demand orientated and cost push theories. Finally, there will be an assessment of the empirical evidence.

(a) The Role of Trade Unions a Theoretical Appraisal

For many the role of trade unions in the process of wage determination is fundamental; for others trade unions are merely organizations which take part in the bargaining process whilst in no way affecting its ultimate outcome. Some indeed have argued that trade unions, because of their bureaucratic nature may lead to lower wage bargains at some, or all, levels of demand (though in this case a lagged response is more likely).

In general, however, most monetarists would concede that trade unions cause wage rates higher for their members than would be observed in atomistic labour markets, and indeed there is considerable evidence for this (see Mulvey

and Trevithick[54] who quote a variety of evidence). What however is doubted is whether unions can cause an inflationary process. Essentially the argument is that, like any monopoly, a trade union will lead to a higher price but not a rising one. Unless the degree of monopoly is increased (and increased union concentration has been relatively unimportant in the last few years) the equilibrium wage rate will not be affected.

Although this point has intuitive appeal its practical importance is open to question for even if unions do maximize subject to constraints (and this in itself is open to doubt) there is no reason to believe the wage rate will be stable. It has been suggested that unions maximize a utility function in which one of the arguments is income (either nominal or real). In this case, as Williamson and Wood[55] put it, "the wage rise sought will be such as to equate the marginal utility of higher income with the expected marginal disutility of greater unemployment and of longer strikes". Since a variety of factors may affect the marginal utility of income (experience of other sectors or even countries, for example), there is no reason to believe that the function the union maximizes, if indeed it maximizes anything, is stable.

A second argument often given concerning the inflationary role of trade unions is that, although unions raise their wages above the market level, they do so only by pushing wages of non-union workers below the market level.

This is because the high union wages will create unemployed workers who will bid down wages in non-union sectors. Under this view whatever gains are made by trade union members lead to corresponding losses for non-union members.

This argument seems to be more commonly advanced for the U.S. where only about 25 % of the labour force is unionized; in Britain the proportion is around 40 %. It seems unlikely that when such a large proportion of the labour force is unionized there will be sufficient downward flexibility (except perhaps over very long periods) of non-unionized labourers wages. This is especially true when it is considered that there may be emulatory effects in the non-union sector, which can arise for a number of reasons. Firstly, there are often organizations in this sector, which, though not formally recognized as such, act in a manner similar to trade unions. Secondly, employers may follow union wage rates, to some extent at least, in order to remain non-unionized. Furthermore, wage agreements in this sector may be determined by independent arbitrators who in their evaluation take into account union wage rates. Finally, there may be government imposed minimum wages (or similar legislative devices) which imply wages are not entirely market determined. For these reasons, it would seem the level (and indeed the rate of change) of a substantial proportion of non-unionized workers wages will not diverge too far from that of unionized workers. It is doubtful whether there will be sufficient flexibility in the rest of the

labour force to counteract such upward pressures.

Cost push theories can also be attacked, and often are, on macro-economic grounds. For example, it is often argued that union pressure for higher wage rates (above the market level) will lead merely to a once and for all increase in wage rates with concomitant higher unemployment, given a steady rate of growth of the money supply. Thus unions can affect the price level and the unemployment rate but cannot cause a sustained inflation.

On theoretical grounds, if the money supply (or its rate of growth) is unaltered, it seems clear the argument is sound, at least in the long run. In the short run, however, higher wage demands may, unless immediately offset by sufficient unemployment, actually lead to a temporary increase in demand; this of course will continue only until the full force of higher interest rates and declining wealth hit the economy. Once unemployment starts rising and profits falling management will become less willing to give into high wage demands and unions, afraid of unemployment (with the associated danger of bankrupting the firm) are likely to moderate their claims, albeit slowly. This does not mean, however, the argument stated above should be totally accepted for it rests crucially on the statement "given a steady rate of growth of the money supply". It may be the case that the authorities, afraid of higher unemployment, will attempt to validate the wage claims by increasing the rate of growth of the money supply. They may temporarily, in fact, allow

higher unemployment but when it reaches intolerable levels (what is understood by intolerable may change over time) adopt expansionary policies, thus giving the impression that the money supply is exogenous when in a sense it is not.

One must however, be careful here since the authorities are operating not in a closed economy but in an open economy with either fixed or flexible exchange rates. Let us consider the former case first. Under fixed exchange rates the authorities actions are heavily, although (at least in Britain) not totally circumscribed. Therefore, any attempt to validate wage claims will lead to a balance of payments deficit (on both the trade and the capital account); in consequence, wage claims can be validated only in the short run, though again, in Britain, the short run may last for some time. If the authorities do not attempt to validate wage claims, workers in the traded goods sector may price themselves out of their jobs as well as affecting adversely company profits. This does not necessarily mean that the balance of payments will go into deficit, for if capital flows are sufficiently elastic (and it is possible they may not respond very much if the cause of interest rate differentials is high wage claims), the upward pressure on interest rates may mean that the overall balance of payments does not go into deficit. Nevertheless employment and output will still be reduced and these effects should moderate wage claims.

Let us turn now to an economy operating under flexible exchange rates. If the wage push is not validated

the balance of payments may go into surplus or deficit depending on the relative strength of capital and current account effects. If the former predominate (i.e., the surplus on the capital account exceeds the deficit on the current account) the exchange rate will move upwards, and, at least in the short run, the situation in the domestic economy will worsen - in terms of unemployment. If on the other hand the latter is dominant the currency will be devalued and the wage claims will be, at least partially, validated. So, although a flexible exchange rate, in most cases, insulates the home economy from foreign shocks, it may intensify home disturbances.

It is possible however that the authorities attempt to validate wage push inflation; it is in this situation that the differences between a fixed and flexible exchange rate are more readily apparent. By holding down interest rates the balance of payments will go into deficit which will lead to a depreciation of the currency which in turn will tend to counteract the effects of the higher wage claims on employment and output. The depreciation of the currency will intensify inflationary pressure which may imply that a more restrictive monetary policy will eventually be introduced; however, a cost push inflation could, under flexible exchange rates, proceed without hitting barriers for a long time.

(b) Specific Cost Push Theories

It is now time to turn to specific cost push theories.

It will be seen that, in general, these tend to ignore the resistance of management and, in part for this reason, the role of demand factors (it is often implicitly or explicitly assumed that monetary policy is validatory - some authors, however assume it to be impotent). It will also be seen that many theories are not readily empirically testable, a matter which will be discussed in more detail later.

One theory, which has been suggested by Wiles,[56] is based on the premise that much of economics assumes an idealized economy and completely ignores real world processes. In particular, it is argued that unions follow an almost arbitrary policy of wage grabbing guided perhaps by such factors as "new left" irrationality and the upsurge of left wing trade union leaders. It is assumed that unions bid for real wages and that while money is necessary to validate inflation, in practise it merely acts as a counter.

Such theories are difficult to refute, however, the phenomena they seek to explain (wage grabbing) can easily be explained in terms of the monetarist hypothesis and for this reason they should be treated with caution. The apparent ever upward escalation of wage claims is perfectly consistent with increasing inflationary expectations and the increased role of left wing leaders may result solely because workers feel such leaders will better defend their living standards. Finally, the idea that unions pick their wage claims out of a hat seems unconvincing; more often it seems that these claims are necessary to maintain living standards or relativities.

A different theory, often expounded by the left, sees inflation as one product of the class struggle. Essentially workers push for higher wage rates in the hope of achieving a larger share of the "cake" but, because profits respond, inflation and possibly unemployment result. Although this theory may be applicable to the behaviour of certain unions it cannot, I think, be applied generally, for were unions really as class conscious as assumed they would make this far more clear than in fact they do. More often unions rationalize claims in terms of maintaining their members standard of living (or in similar terms). In fact it often seems the case that the only time unions act together is in opposing restrictions on free collective bargaining or other union "rights" (this would seem to be the only time when unions have a common interest).

Another theory which has been expounded by Hicks[57], is based on the concept of fairness. One manifestation is the following: workers will, especially after a long period of rising real wages, (for Hicks it is these and not money wages which matter), expect this trend to continue and will think they are being treated unfairly if this does not happen - thus we have the well known frustration hypothesis. This and other manifestations will be discussed below (the Scandivanian theory, discussed in an earlier section can also be seen in terms of this criteria).

The frustration theory was a popular explanation of the inflationary upsurve in Britain at the end of the 1960s.

The slow growth of real incomes led to frustration on the part of workers who, to quote Ball (in Laidler[58]), "sought to realize some real wage objectives the frustration of which eventually caused the Phillips curve to shift".

The hypothesis, though at first sight plausible, has been attacked on a number of grounds. Firstly, as argued above, in a fixed exchange rate regime there are certain outside constraints which make extended wage push unlikely (these constraints may of course be fairly slow to operate). Secondly, according to Wiles, the precision required to discover changes in real wages is beyond the abilities of the average worker. This argument I feel unconvincing; workers may not be able to calculate precise magnitudes (though trade unions might) but would certainly have some conception of the way their real wage is changing - this is particularly true in the late 1960s when it appeared real wages were stagnating. A final argument suggests that workers will eventually realize the changing economic circumstances and adopt more conciliatory behaviour, for, even under flexible exchange rates the authorities must sooner or later attempt to stop the inflationary pressures resulting from "frustration". This suggests that frustration may explain wage patterns for a time, however market forces will eventually make such a factor unimportant.

In some cases there may be a need for the real wage to decline and a similar scenario of events to those suggested above is likely in this case, i.e., initial trade union pressure but in the long run a recognition of the changing

environment. The most obvious case where real wages should fall, or at least rise less rapidly, is following an adverse shift in the terms of trade, for in these circumstances, either nominal incomes must fall below their previous equilibrium path or goods prices must rise in order to re-establish equilibrium. The former seems unlikely to occur, thus prices must rise, but if there is real wage resistance a wage-price spiral will be initiated. The above may be important to an understanding of the impact of the oil crisis.

A further consequence of Hicks' concept of fairness may be that workers respond positively to tax increases. Traditional economic theory has implicitly assumed that workers are neutral between private and public spending; more recent literature, e.g., Hotson[59], has argued that there may however be important supply side effects which should be taken into account. Broadly speaking three such effects can be isolated.

(a) Substitution and income effects on the supply of labour. These work in opposite directions, the former to decrease the supply of labour (when taxes increase) the latter to increase it. Evidence on the relative power of the effects in the labour market seems somewhat limited and often it is the author's political viewpoint which determines, for him, which effect dominates.

(b) A higher coefficient on inflationary expectations which is caused by increasing average tax rates

(these may perhaps be due to inflation in a non-indexed economy) when public and private goods are not regarded as perfect substitutes.[60] This hypothesis is expounded by Jackson, Turner and Wilkinson[61] and may explain why there is sometimes observed a coefficient of greater than unity on price expectations.

(c) A counteracting effect on wages caused by tax hikes aimed to damp down inflation. This possible perverse effect has been emphasized by Hotson and also mentioned by Blinder and Solow.[62] If the demand for money with respect to the interest rate is low, and if higher tax rates do not affect the money supply, it may well be that a perverse effect of some considerable duration could occur though eventually one would expect rising wage rates to dampen demand sufficiently to eliminate further perverse side effects.

A conclusion regarding the effects of tax increases is in order here. Tax increases may indeed further stoke the fires of inflation though it should be remembered that there are always actual and potential demand restraints which may eventually bring the process to a halt. However, it is possible, and in Britain it seems very likely, that increasing taxes have put considerable pressure on profit rates. This idea, expounded by Bacon and Eltis,[63] may help to explain Britain's relative industrial decline particularly through the 1960s and early 1970s. If it is correct, increased

taxation has been an important factor in wage determination (see Johnston and Timbrell[64]) but rather less so with regard to price determination.

Hicks concept of fairness can also be applied to relativities and, although this will not be done here, it will be seen in later chapters, that this may be an important factor in explaining the often noticed post-controls wage and price explosions.

(c) A More General Model of Wage Push Inflation

A more general model of wage push inflation will now be sketched; the essential points are as follows. Although trade unions may be maximizers it is doubtful whether the function which they maximize is particularly stable. What may be the case is that they maximize a utility function where utility is affected adversely by higher income taxes, by unfavourable changes in relativities and by a variety of other factors mentioned previously. It is therefore perfectly possible that at various times trade unions institute, or attempt to institute, wage push inflation, and, because a considerable section of non-unionized labour will follow suit, wages will bid up. Demand factors will also have a role to play here for as the unemployment rate declines the advantages to be gained from a strike seem to be greater and the costs (the danger of unemployment, lost income through strike action) seem less. From the management's point of view resistance will probably (but not necessarily) be at its lower in

periods of high unemployment, (when labour shortages are not most severe and when foregone profits will be greatest) and will be increasedas the rate of unemployment increases.

Trade unions then may, for a variety of reasons, attempt to push up wages above market levels, however, their power to do so is not unlimited for their actions are constrained by demand policies. It remains to be seen how demand policies will operate. Essentially, as suggested, the authorities may attempt to validate wage claims, particularly if they deem the unemployment rate to be too high. They may however only be able to validate wage claims in the very short run under fixed exchange rates and even under flexible exchange rates may find the inflationary consequences of such a policy to be too severe to continue it indefinitely. Thus in conclusion trade unions probably have a direct effect on wages and an indirect effect as well (by influencing demand policy) however, it seems unlikely that they have as important a role in the inflationary process as is often suggested.

(d) Empirical Evidence

The main conclusion which seems to have come out of attempts to test wage push theories is just how difficult it is to devise adequate tests. In the case of demand based theories the essential arguments are easily identified, yet when it comes to cost push theories there seems no consensus on what the correct arguments should be (see for instance, Purdy and Zis[65]).

In actual studies a number of methods have been used, for example change in trade union membership (see Hines[66]), dummy variable techniques (see Gordon[67]) and strike action (Ward and Zis[68]). All can and have been severely criticized. The use of change in trade union membership seems subject to a number of faults. In the first place the rationalization for this variable has been poor; secondly, in the U.K., changes since World War II have been small often little greater than changes in the proportion of the labour force in closed shops or in movements between industries; these should therefore also be considered. Finally, there may be some correlation between this variable and demand variables and the fact that Hines found no such correlation may be due to inadequate tests.

The use of dummy variables is arbitrary since it is not clear which are periods of wage militancy and which are not. Furthermore, this method does not allow discrimination between wage push hypotheses and other explanations for large unexplained residuals are automatically attributed to wage push when their cause may be otherwise. The use of strikes is also flawed. In particular, the relationship between strikes and the rate of wage change is ambiguous since a greater number of strikes may signify more union militancy, more employer resistance, or both. Furthermore, it is not clear why the number of strikes, as opposed to the duration or the number of work days lost, should be the chosen variable.

From all this it seems that attempts to test wage push theories have, so far, been of little value since no adequate proxy for wage push has been determined. This does not of course mean that the theories themselves are of no importance and in some cases (such as that of taxes where testing is relatively easy) they do seem to have some role to play.

1.11 Some Conclusions

This chapter has dealt with many topics which have been considered by various authors to be important in discussing the inflationary process. One of the main conclusions seems to be that demand factors do have a role to play and this is so even if one takes trade unions into account. Further, inflationary expectations are of vital importance and it may be the case that demand factors are neutral with respect to output in the long run. It has also been argued that any account of the inflationary process must allow for the existence of the rest of the world and that, whereas under fixed exchange rates a country has little control of its own inflation rate, under flexible exchange rates it can to some degree retain control. Finally, it was argued that institutional rigidities and the existence of trade unions make the process of demand management much harder than it would otherwise be, and, in particular that these factors may influence monetary and fiscal policy.

Footnotes to Chapter I

1. In a sense this discussion is incomplete since attention is focused solely on wage inflation. There will, however, be some discussion on the determinants of prices in Chapter 3, where it will be argued there is an important distinction to be made between markets for manufactured goods which are, in general, fix price markets and those for primary products which are auction markets.

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CHAPTER II

WAGE AND PRICE CONTROLS: GENERAL ISSUES

Having looked at inflation and attempted to highlight its main determinants we are now in a position to look at prices and incomes policies as a possible remedy (or more realistically as a component of the remedy) for inflation. This chapter, which is essentially macro based, will attempt to show the gains which can be brought about by the use of controls and will suggest reasons why these gains may not arise in practice. The following chapter will look at more specific issues and will place more emphasis on criticisms of controls, which have indeed been numerous. The final chapters will look at controls in Britain from econometric and historical viewpoints respectively.

The format of this chapter will be the following. There will be an initial discussion of why a role may exist for prices and incomes policy; this attempt will largely be based on an analysis of the policy alternatives for excess demand initiated inflation. Following this I will look at the role of wage and price controls as a cure for inflation in a closed economy, firstly with regard to demand initiated inflation and then with regard to cost push inflation. Finally, the analysis will be extended to the more realistic case of an open

economy with both the fixed and flexible exchange rate cases being examined.

2.1 Alternative Policies of Coping with the Inflation-Unemployment Dilemma

The simultaneous combination of inflation and unemployment brought about the death of the Phillips curve and to many sounded the death of market explanations altogether. That such judgements were premature was indicated in the first chapter, for the expectations hypothesis of Friedman and Phelps has served to put market orientated explanations back on the map. Indeed, if such theories are able to explain inflation in its entirety (and this is what many, including Phelps and Friedman, would suggest), one may wonder why there should be any need for controls. This is the view of Carr[1] when he asserts "the arguments advanced to support the position that wage and price controls reduce inflation depend crucially on the existence of cost or price push inflation. Since there is no theoretical support for these theories of inflation there is no theoretical support for the proposition that wage and price controls will reduce the true rate of inflation." It will be argued, however, that traditional remedies have weaknesses and that there is something of a policy vacuum which controls might fill. That any such conclusions may need to be modified when controls themselves are discussed is readily apparent; however, I believe that showing even a potential role

for controls is of some value.

(a) Living with Inflation

Policy makers faced with high rates of inflation essentially have two policy options open: (1) traditional demand restraint measures possibly accompanied by indexation of some kind, (ii) maintaining the economy at a high level of demand (though presumably not at a level sufficiently high to cause accelerating inflation) and allowing inflation to run unabated; it is to the latter I turn first.

A policy of learning to live with inflation is usually justified on the grounds that the costs associated with inflation are very small, certainly far less than those of unemployment. To the laymen such a premise may seem far from obvious, however it can be rationalized in the following manner. If inflation is perfectly anticipated, and further, if the correct adjustments to inflation are made, the costs of inflation will, in the short run, be very small. Indeed, the only cost will be the economizing of holdings on currency and non-interest bearing deposits which arise (given that the demand for money is not perfectly interest elastic) for institutional reasons. Such costs[2] may over a long period be substantial, (since money balances grow over time) even when discounted, however this is less an argument for introducing demand restraint than one for altering institutional arrangements

such as to allow the payment of interest on money balances.

The above scenario gives credence to the belief that inflation is a relatively painless phenomenon, a belief much at variance with that of the general public.[3] In recent years such a view has been under attack from a number of members of the economics fraternity (for example Hicks,[4] Okun,[5] Ackley,[6] and Wallich[7]), for reasons which will be examined below.

The first point to be made is that perfectly anticipated inflation is rather an idealized notion. Indeed, it is unlikely that inflation has ever been perfectly anticipated (presumably different transactors have different views on the expected inflation rate) and in consequence there will be gains and losses made in any inflationary process. It should also be remembered that the variance of inflation rates has been positively correlated with its average extent, which implies that higher inflation rates will make it increasingly difficult to anticipate future inflation rates.[8]

Secondly, even when inflation is perfectly anticipated, it may be difficult to make the correct adjustments. Difficulties may arise through government desire (Wallich instances some examples), due to uncertainty which may lead to imposition of risk premiums, due to insufficient knowledge, or to a variety of other causes. Whatever the reasons there are welfare losses involved. Thirdly, the role of stable

prices in "customer markets" in disseminating information to consumers has been stressed in recent years (Okun for example places attention on this); this role is dependent, in considerable measure, on a fairly stable price level. The welfare losses which arise from a fluctuating price level will be further intensified by any adjustment costs associated with the process of adaption (this may be particularly important in the wage determination process). The final points I wish to make are related to potential instabilities inherent in any attempt to maintain a steady inflation rate. One possible source of instability arises from the incentive to switch asset holdings away from relatively liquid assets to relatively illiquid ones (or alternatively to increase consumption) like capital and land. Such a tendency will act to increase the inflation rate, and will, if sufficiently large, lead to instability.[9] This point may only be important in hyperinflationary situations; however even a low rate of inflation may be unsustainable (though of course there is a considerable element of conjecture here) since it may indicate to the public that the government has reneged on attempts to keep the price level constant. Since it has done that, there seems little reason for the public to believe it will, if pressured, maintain its attempt to sustain a steady rate of inflation. Such beliefs would almost certainly lead to upward pressure on the inflation rate.

(b) Demand Restraint

For a variety of reasons a steady rate of inflation cannot be viewed as an appropriate policy option. In practise there may be a case for maintaining a low steady inflation rate, however given the welfare losses which would result from inflation rates of the level of those in the U.K. in 1974-5, some alternative would seem to be necessary in this type of situation. At this juncture I turn to the more orthodox remedy of demand restraint.

Although policies of demand restraint are likely to be successful in the long run they can hardly be viewed as painless. Typically, it is necessary to create sustained periods of high unemployment in order to reduce inflation. This may be due to the nature of the short run Phillips curve (i.e. most estimates, though not all, find it to be curvilinear and relatively flat in areas where unemployment exceeds the natural rate), or to deeply rooted inflationary expectations, or to both; whatever the reason it does seem that the path of demand restraint is a long and hard one.

A possible reply to this is the following. Although demand restraint involves unemployment the costs may not be particularly great simply because unemployment is no longer costly. In particular, if unemployment is seen as a search phenomenon, as many suggest it is, and if it is also realized

that the unemployed are protected from many of the economic losses which they would previously have had to suffer, the state of unemployment seems less detrimental than might at first be thought.

Arguments of this kind, in my view, go too far in de-emphazing the costs of unemployment. In the first place, the extent of search unemployment is not as great as some sources assert; it is clear that a considerable part of unemployment is, and has been, involuntary unemployment (most notably in the 1930's). In the second place, although benefits protect the unemployed from a large part of the economic losses they would otherwise suffer, there seem to be important non-economic losses (e.g. social degradation, lessened respect for economic and social institutions) which should also be considered. Furthermore, unemployment hits certain groups particularly severely (teenagers, minorities) and leads to the danger of increasing social conflict - for example, the growth of racist groups in Britain is, at least partly, related to high unemployment rates. For these reasons unemployment, although less costly than at one time, is still a serious problem.

Demand restraint then is likely to involve considerable losses of welfare and indeed is commonly alledged to be politically infeasible. Monetarists have often seemed unaware of the problem although more recently many have

suggested indexation as a way of alleviating the costs. A full treatment of indexation would require considerable space and for this reason only a few brief points are made here. In the first place indexation can reduce the costs of inflation, at least for those who are indexed (if there is only partial indexation the unindexed remainder suffer more severely), by allowing the formulation of contracts in real and not nominal terms. Presumably, if indexation could cover all types of arrangements (social security payments, wages, bonds etc.) the costs of inflation could be lowered substantially. In the second place, indexation on wages would make the effects of demand restraint on inflation more favourable, vis-à-vis those on unemployment, than is at present the case (this is because expectations, at least adaptive expectations, take into account not just the most recent inflation rate but a weighted average of past inflation rates and therefore adapt slowly to the lower inflation rates which result from demand restraint).

There are, however, problems associated with indexation. For example indexation to the CPI will, in the face of a supply shock (such as occurred following the oil price hike), intensify and not ameliorate inflationary pressures - a possible remedy might be indexation to the GDP delfator. Further, indexation on wages may arise only partially, if at all, through market processes (the COLA schemes in the U.S.

for example provide for only partial indexation) and optimal indexation - which may not be complete indexation - may require government sanction. If this is the case indexation is really a form of wage and price controls (it should be noted that monetarists such as Friedman[10] do not support compulsory wage indexation). For these reasons then indexation, although probably desirable, is not without its attendant problems, and may, unless made compulsory, not be able to reduce, to any great extent, either inflation or the intensity of unemployment in a period of demand restraint.

2.2 Wage Controls and the Unemployment-Inflation Trade Off

So far consideration has been given to what might be seen as the alternatives to wage and price controls. It has been argued that a strategy of learning to live with inflation is not a good one, that reliance on demand restraint alone may lead to a long and painful process of adjustment, and that the use of indexation may not be sufficiently extensive (at present this is certainly the case) to reduce, in any important sense, the costs of adjustment. This in itself of course is not sufficient reason to support the use of incomes policies and at this juncture I wish to commence discussion of their use by showing how they may be able to make the inflation-unemployment trade off less unfavourable.

The model which will form the basis of much of the

discussion is of the Friedman-Phelps type i.e. one in which there is no money illusion. To many this would seem a strange choice for it is often assumed that monetarist models allow little or no role for incomes policies and that such policies can only be of use in cost push situations (or alternatively when there is a substantial degree of money illusion). The view which is taken here is somewhat different, this being that controls may be more effective if the natural rate hypothesis holds than if there exists cost push inflation or complete money illusion. During the course of this chapter I hope to illuminate this rather unorthodox view, though for the present I shall concern myself with the role of incomes policies in a Friedman-Phelps world.

(a) The Announcement Effect

In so far as monetarists envisage even a potential role for controls it is through what is called an announcement effect. This is the view of Walker[11] when he states:

> If there is a case to be made for wage and price controls it is that they have an effect on people's expectations. They are supposed to make people feel that the inflation rate will be lower in the future and encourage them to plan accordingly.

In discussing the announcement effect it is worth highlighting two issues, its theoretical role and its empirical importance. As regards the former, I would argue very strongly that an announcement effect on expectations is not the only rationalization for controls (the arguments will be developed later);

nevertheless, I would still regard the existence or non-existence of such an effect as an important issue for the following reasons: (a) if such an effect does occur controls would seem a very much less painful method of curing inflation than would otherwise be the case (b) if, on the contrary, there is no announcement effect it is likely that incomes policies will be unpopular, at least amongst trade unions (this would also be the case if the announcement effect occurs but is small in respect to the reductions proposed by the policy). For this reason the possibility of widespread industrial action and government manipulation arises; furthermore, there is also the likelihood that there will be a surge in wage rates between the date when wage and price controls first come to be expected and the date on which they are enacted.

I now wish to discuss, briefly, empirical estimates which have been made of the announcement effect. As far as the U.K. is concerned the sole evidence here would seem to be that provided by Carlson and Parkin.[12] These two authors used the results of a Gallup poll over the period 1961-1973 to generate a series for inflationary expectations. The poll was a monthly one which asked (each time) 1000 individuals whether they thought the price level would go up, stay constant or go down. From this qualitative information Parkin and Carlson, by making certain assumptions, generate a quantitative series of inflationary expectations and then try to find the model

which most accurately generates that series. For periods of low inflation they find a first order error learning model the most suitable whereas for periods of higher inflation a second order error learning mechanism is preferred i.e. inflationary expectations are purely adaptive. The main exception to this conclusion is the devaluation of 1967 which was discovered to have had a marked upward influence on expectations; wage and price controls on the other hand had no effect with the possible exception of the CBI voluntary price restraint commencing in July 1971. Even here however, the order of magnitude was statistically insignificant.

It is perhaps too early to come to define conclusions on the subject as yet; the evidence seems to be too small. In particular, doubts should be raised about a method which can generate precise quantitative estimates from qualitative data.[13] Further, there are also problems in the accuracy of information obtained from survey polls (as U.K. election polls have made clear) although the extent of such inaccuracies may be small. Finally, there is some contrary evidence from the U.S.A. where MacGuire,[14] basing himself on the Livingston data, found the observation for 1971:4 was 1.5% below the predicted value; further this "is significantly different from the predicted value at the 5% level by a one tailed test."

(b) <u>The Rotation Hypothesis</u>

As indicated above evidence on the announcement effect

is probably insufficient to make definite predictions about its existence. For the rest of the chapter it will, however, be assumed that such an effect does not occur, in order to show that incomes policies can work through other channels. Specifically, it will be argued that by rotating the wage curve inflation will be lowered beneath its expected value with a concomitant effect on inflationary expectations.

The rotation hypothesis, with which I now wish to deal, can best be introduced in an historical context. Traditionally in econometric work it was assumed that controls would, if anything, produce a shift effect on the wage equation and thus the effects could be captured by the use of an intercept dummy variable. Given the following augmented Phillips curve $w = a_1 + a_2U^{-1} + a_3p^e$, where w is the percentage rate of change of wages, U the unemployment rate, p^e price expectations and a_1, a_2 and a_3 parameters it was assumed that the a_1 coefficient might be lowered by the imposition of wage controls. However in a seminal article, Lipsey and Parkin[15] argued that the effects of wage controls (and price controls as well) might be more complicated than had hitherto been realized; in particular, the coefficients a_2 and a_3 might be changed, as might price expectations themselves. The crux of their argument seems to be that the relationship between the percentage change of the wage rate and excess demand might be weakened as a result of wage controls. In essence the wage norm (that rate set by the government as a maximum target for

wage bargains) may act as a bargaining point and thus lead to a flattening of the short term Phillips curve with the implication that at certain unemployment rates incomes policies will have a restraining impact on wage rate changes and at others the policy will, paradoxically, have a perverse effect.

Before drawing the implications of this theory it is necessary to show where the intersection of the policy-off and policy-on Phillips curves occurs. It will be argued, that given certain assumptions, the pivot point will be at the wage norm. As a starting point let us assume the micro policy-off equation is of the form $w_{it} = a_i + b_i u_{it}^{-1} + w_{it}^{e}$ (where i indicates the n individual labour markets, w^e the expected rate of wage inflation, b is a parameter and the other symbols are as used previously). We now introduce a new parameter k which measures the effectiveness of the controls, specifically k = 1 when the policy is completely effective (in this case the policy-on equation will become a horizontal line) and zero when the policy is completely ineffective i.e. when the policy-on and policy-off equations are identical. It can now be shown that the policy-on equation will be of the form $w_{it}^{on} = k_i w_t^{*} + (1-k_i)a_i + (1-k_i)\, b_i u_{it}^{-1} + (1-k_i)w_{it}^{e}$, where w^* is the wage norm. In order to show that the two equations intersect at the wage norm we replace w_{it} and w_{it}^{on} by w_i^* and show the solution is the same for both equations:

1) $w_{it}^{*} = a_i + b_i u_{it}^{-1} + w_{it}^{e}$; the policy-off equation.

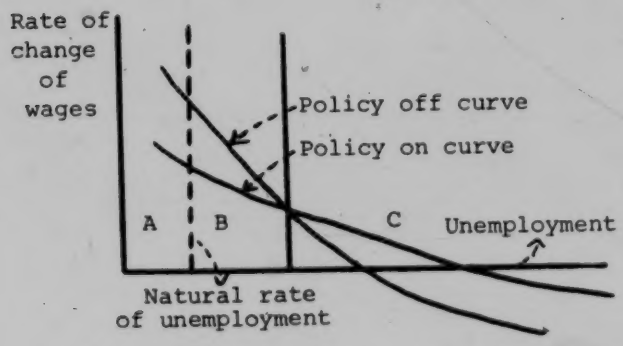
2) $w^*_{it} = k_i w^*_t + (1-k_i)a_i + (1-k_i)\, b_i u^{-1}_{it} + (1-k_i)w^e_{it}$ and therefore

$(1-k_i)w^*_{it} = (1-k_i)a_i + (1-k_i)b_i u^{-1}_{it} + (1-k_i)w^e_{it}$ and therefore

$w^*_t = a_i + b_i u^{-1}_{it} + w^e_{it}$ so it is seen that the two equations intersect at the wage norm. It should be noted that the proof was based on the assumption of micro Phillips curves. Whether such an intersection occurs with the macro curves depends on (a) the following aggregation conditions holding (i) that a constant degree of inequality of micro unemployment rates prevails, (ii) that the policy is equally effective in each labour market and (b) that the policy does not change the slope of the curve other than by the pivot effect. As regards (a), the second assumption is rather a strong one; for example it is often thought that wage controls bear more heavily on the public than the private sector. However there is no indication of the direction the bias will take. Regarding (b), it is possible that the policy may influence wage claims more when they are above the guideline than when they are below it; if this is the case it can be shown (Reid[16] shows this for a linear short run Phillips curve) that the intersection point will be below the wage norm. The opposite is also conceivable, in which case the intersection will be above the norm (these and a number of propositions are discussed in considerably more depth in Reid).

So far I have argued that there may occur a rotation of the wage curve and this rotation will take place at or around the wage norm. Some of course would doubt such a hypothesis (for example see Godfrey[17]); however, a number or more recent studies including those of Reid for Britain, Canada and U.S. and Wilton et al. for Canada have found empirical evidence of its existence. Further, studies such as Godfrey's, as will be argued in a later chapter, provide inadequate tests.

Assuming that the hypothesis is correct it is now time to derive the implications for wage controls. To do so it may be helpful to consider the following diagram:



As can be seen the diagram is divided into three regions. Looking at region (c) it would seem that policy has a perverse effect in this region (reasons why the economy might be in this region will be given later) and indeed this is the case. The policy by acting, in part, as a floor as well as a ceiling will raise the rate of wage change above the level it would otherwise have been. Lipsey and Parkin argued that this has occurred many times in the British case though for a number of reasons their study should be treated with caution.

The second region to be discussed is that of (a). At first it would appear that in this region policy would be very successful; in reality this is unlikely to be the case. The reason is that in this region expectations will continually underpredict the actual rate of inflation and labour is likely to adapt expectations upwards through time. Any attempt to forbid increasingly high wage bargains is likely to be viewed with suspicion and thus while wage controls may be of use in a totalitarian regime in region (a) it is doubtful whether they can be of long duration in more democratic societies. In a sense this is somewhat unfortunate for by setting the expected rate of inflation equal to the actual rate (which will give the long run Phillips curve) and by further equating w_t^{on} with w^*, it can be shown the long run policy-on curve is nonvertical even when the long run policy-off curve is vertical. Thus, if an incomes policy could be effectively sustained when unemployment is below the natural rate, and, if the costs on the margin were always less than the marginal benefits, there would be a strong rationale for imposing a permanent incomes policy. However, as emphasized previously the first condition is extremely unlikely to hold and it is doubtful too whether the second condition will be fulfilled.

There is a third region yet to be discussed - region (b). If a policy is applied in this region it can be seen to lower inflation rates (and possibly unemployment as well depending on whether and how monetary policy is influenced by

the imposition of controls). Furthermore, if expectations are adaptively based the inflation rate will be further lowered as expectations are revised downwards in the light of the effect of the policy. Therefore, incomes policies can be effective even if there exists no announcement effect.

This in essence is the argument which provides the strongest support for controls. Before proceeding to the next section, a discussion of demand management, I wish to clarify two points. Up to now it has been argued that controls may rotate the wage equation by a proportion of the controls-off wage equation minus the wage norm, that proportion being signified by the coefficient k. However, little has been said about the factors which influence the size of the variable k. It will be argued that the main influence is the severity of enforcement of the policy (types of policies will be discussed more fully in the next chapter); e.g., a wage freeze is, a priori, likely to rotate the wage equation more than pleas by the government for moderation. The implication therefore is that k may vary from policy to policy and even within different episodes of the same policy; the econometric ramifications of this will be emphasized in a later chapter.

The second point is the following; an incomes policy can be successful even though the wage norm is broken by most or all settlements, indeed, it is extremely likely that such will occur. Given this observation it is incorrect to

call a policy unsuccessful merely because the wage norm is continually broken.

2.3 Demand Management and Controls

The preceding section put forward the view that incomes policies can, under certain conditions, be successful in the fight against inflation. In terms of demand management it was suggested that if the economy operates under controls unemployment should be kept above the natural rate but below that rate at which the policy-on and policy-off curves intersect, in other words some measure of demand restraint is necessary for the success of a policy, however, this should not be too severe.[18]

In what follows I wish to highlight a number of issues related to the problem of keeping the economy in, what will be called, the target area, and then I shall deal briefly with how the optimal policy should be determined.

The first point to be made is an obvious one and is this, if the authorities wish to keep the economy within a certain area they must be sure what the area is i.e. know the relevant Phillips curve. Given that the policy-on and policy-off curves may not intersect at the wage norm (for reasons earlier discussed) the determination of the target area may be more difficult than it would first seem to be

which suggests that the economy should not be allowed too near the unemployment rate corresponding with the wage norm.

A second point is that the value of k will not be known prior to the commencement of the policy and can only be guessed at (the estimate should be related to the stringency with which controls are to be applied). If however the value of k turns out to be other than expected i.e. the inflation rate is lower or higher than predicted demand policies must be adapted accordingly, for the feedback effects (of a too low or high inflation rate) on output make it more likely that unemployment will move out of the target zone. In other words, the authorities should keep a close eye on the way the economy behaves and frame policies in the light of this behaviour (lags in the operation of monetary and fiscal policies make the authorities' task all the harder).

Thirdly, if the lowest attainable norm implies an unemployment rate very close to the natural rate it may be advisable not to impose a policy. There are two reasons for this: (a) techniques of demand management may be inadequate to keep the economy with narrow (undefined) limits. In other words whilst there can be little or no doubt that the authorities can control the general course of the economy they may have insufficient instruments to fine tune it, (b) if losses due to inflation are weighted very high relative to those of unemployment, an incomes policy, with a high wage norm, may

lead to losses greater than would otherwise occur. In countries such as the U.K. where traditionally unemployment has been seen as the chief foe this argument may however not be too important.

The foregoing has indicated that it may be less easy to keep the economy within the target area than would at first seem to be the case. How significant the various points are is difficult to gauge though it may well be thought that if the authorities (a) have knowledge of the constraints under which they are acting, (b) use economic rather political considerations as their guide for action and (c) are operating on a relatively flat short run Phillips curve (in which case the unemployment rate associated with the wage norm will be further from the natural rate) these are minor problems and not major stumbling blocks.

The second issue is how the optimal demand policy should be determined, given controls are to be imposed. This is a complex matter and I shall do no more here than give a hint of the method which should be used and how this optimal policy will differ here from the case where demand restraint alone is used.

The analysis will commence by considering optimal policy when controls are not imposed. The problem is to minimize losses (it is assumed here losses can be calculated though it might be difficult to do so with any degree of

precision in practise) which will, in large part, be a function of inflation, unemployment subject to the constraints imposed by the economic system. Given certain assumptions, it may well be possible that a unique solution can be reached, which will determine the optimum trajectory for the economy to follow.

The introduction of incomes policy will complicate the analysis slightly. In particular, the constraining equation will be changed (e.g., if one of these equation was of the form $w_t^* = a + bu_t^{-1} + w_t^e$ it will now become $w_t^{on} = kw^* + (1=k)a + (1-k)bu_t^{-1} + (1-k)w_t^e$) and the loss function must be modified to account for the costs of incomes policy. It should also be noted that if the optimal solution suggests that unemployment should be kept above (for all or a considerable part of the time) that rate concomitant with the intersection of the policy-on and policy-off curves (this rate may change as the policy is revised) it is probably best that the policy should not be introduced.

It is hoped that the foregoing gives some indication of how optimal demand policy can be derived. In order to obtain precise estimates it would of course be necessary to attach weights to the components of the loss. In so far as any comparison can be drawn for demand management with and without controls it would seem that the optimal trajectory under controls would involve both less unemployment and a

quicker reduction of inflation that if controls were not imposed. This is because controls, by lowering inflation, can maintain employment (we are ignoring distortions here) above the level which would otherwise have prevailed even if they are accompanied by somewhat tighter demand management (the degree of tightness depends on the success of controls and the feedback effect of lower inflation on output).

2.4 Possible Modifications to the Rotation Hypothesis

It has been suggested, in the previous two sections, that incomes policies can, under certain conditions, have a role to play in the battle against inflation. Some would argue, however, that the potential benefits of incomes policies have been overstated and suggest a variety of arguments to support their case. In the following I shall discuss a number of arguments which imply that the benefits of controls have indeed been overstated (the following chapter will suggest there are also serious costs associated with controls) if in fact any benefits do occur at all.

(a) The first three points deal with expectations. The rotation hypothesis, as usually described, is based on adaptive expectations and it is worthwhile seeing how different forms of expectation formation affect the conclusions reached. The simplest case is that of stationary expectations as described by the original Phillips curve. This case, which few would consider realistic, is given as it

represents the alternative extreme to the natural rate hypothesis; if there exists some degree of money illusion one would expect incomes policy to have a mixture of the effects suggested by the natural rate hypothesis and the original Phillips curve.

In the case of the natural rate hypothesis incomes policy, by rotating the short run Phillips curve, lowered inflationary expectations, thus, ceteris paribus, having a permanent effect on inflation. If, however, expectations are stationary incomes policy can have but a transitory effect on inflation since the economy returns to the original Phillips curve as soon as the policy is removed. If, in fact, monetary policy (or fiscal policy) is not tightened following the imposition of controls inflation will be temporarily higher when controls are removed (since the lower rate of inflation during the controls period will lead to an increase in employment and will thus lead to a leftward movement along the Phillips curve). For these reasons, then controls can be more successful in a world where the natural rate hypothesis holds than in a world of stationary expectations.

While few suggest the non-expectation augmented Phillips curve as a realistic case the rational expectations model is often seriously suggested. If, in fact, expectations are formed rationally, in the sense of Muth (quoted in

Chapter 1), there would seem to be little need for controls or role for them to play. Transactors will be guided by the fundamental economic driving forces (monetary and fiscal policies) and will act so as to make the effects of monetary and fiscal policies fall entirely on the price level even in the short run.

The rational expectations hypothesis offers a strong challenge to incomes policy. However, in Chapter 1, it was argued quite strongly that the hypothesis is unconvincing, certainly in the form presented by Sargent and Wallace. In recent years milder forms of the hypothesis have been proffered, however, even if one accepts these as valid, the predictions drawn from their use, as Reid[19] has shown, are not incompatible with the view that wage controls can work.

It is also possible that expectations are not purely adaptive and will (in the post-controls period) be based purely on observations of the pre-controls period. Were this to occur, the result will be, ceteris paribus, that when controls are removed the inflation rate will be higher than if they had never been imposed. This case may be of some importance in the case of a freeze and may have an element of descriptive power in other situations as well, however, it is unlikely that this manner of expectation formation characterizes all periods of controls.

(b) A second type of argument - not entirely unrelated to those above - is that controls may be effective whilst in operation but their effect is purely transitory and that sooner or later the inflation rate will return to that rate predicted by the policy-off curves. In other words, in the periods following controls (or in that preceeding controls - a point which will be emphasized in a later chapter) the rate of wage change will be sufficiently above the otherwise prevailing predicted value to "make up for lost ground". On the basis of this argument any econometric assessment of controls should include some period of time before and after the periods of controls to measure accurately the effects of controls.

The wage explosion hypothesis can be supported by a number of arguments. It is, however, worth noting that a sudden upsurge of wages following a period of controls is not sufficient in itself to show the effect of controls was transitory. This is because, in the period following controls, the wage determination process once more becomes controlled by collective bargaining and the economy will revert to the steeper policy-off Phillips curve. More then is meant by the post-controls explosion hypothesis than this, and Reid notes a number of reasons why such an explosion may occur.

In the first place it may be that monetary and fiscal policies were inappropriate (for reasons to be suggested

later), as would seem to be the case during the fourth phase of the U.S. controls, and that a wage explosion is a necessary part of the return to economic equilibrium. In Britain, as will later be shown, controls have, all too often, been seen as part of the strategy of "going for growth" and this seems to constitute one of the fundamental reasons why they have often not been successful.

A second reason for expecting a post-controls wage explosion is that if an incomes policy which holds wage costs down does not lead to commensurate effects on prices, in the period following the removal of controls nominal wages will rise sufficiently to make up for the fall in real wages. Even if prices do respond to wages one might expect there to be a considerable time lag in which case there might still be an explosion following the removal of controls. Many would argue that the profit mark-up is fairly constant over time and thus the above argument has little explanatory power. This is the view of Weintraub and Wallich[20] (though Wallich has somewhat revised his views) when they argue price controls are superfluous. Others would argue that the mark-up is subject to shifts through time, for example U.K. profit rates fell sharply through the 1960s. If the latter view is the correct one there would seem to be a case for price controls.

There is another reason too why a wage explosion might occur and this is not brought out by Reid. Frequently

during periods of controls either the wages in some sectors are pushed down relative to those in other sectors or the wages of some income groups suffer more than those of others (or both). If either or both these effects arise there may be action on the part of the affected groups to restore differentials in the post-controls period. That the groups which "gained" from controls may attempt to maintain their newly acquired differentials makes the situation the more complicated and has led one author (Godley[21]) to suggest that controls may, up to date, have had a perverse effect on inflation. For the British case Godley gives the example of public sector workers whose wages were most effectively controlled (in the late 1960s) by government policies and shows that although in the short run the relative position of these workers was adversely affected, in the long run such was not the case (one might add that other factors may have been involved here, for example the increased demand for public sector employees).

All in all then one might expect at least some type of wage explosion following a period of restraint although the magnitude of the explosion may depend on the nature of the policy in operation. One might also expect some sort of wage bulge between the date on which controls come to be expected and the date on which they are enacted, for workers (unless the announcement effect is very strong), in expectation of a slower growth in real wages, will try and

make up the ground they expect to lose under controls. Empirical evidence on the matter is scarce, however, Reid finds in the case of the American Guidelines in the 1960s that the effects of controls were not usurped in the post-controls period. On the other hand, he finds that in the periods following Phase I and IV the gains made were reversed.

(c) It was suggested earlier that if controls are to have any likelihood of success they must be accompanied by appropriate demand policies; many would argue that demand policies are, for a variety of reasons, unlikely to be appropriate. In the first place, the views of politicians and economists on the causes of inflation are not, in general, synonymous. To many politicians controls are seen as the natural policy to fight inflation, which is invariably blamed on the irresponsibility of monopoly groups. Even when controls are accompanied by appropriate measures of demand restraint, politicians (and the public too) are likely to attribute any success in reducing inflation to controls and may in subsequent periods reverse the restrictive monetary and/or fiscal policies. In other words, it is argued that those instituting controls have inadequate knowledge of the economy and fail to see that controls can at best be a complement for demand restraint but cannot substitute for it.

This view is certainly convincing regarding many periods of controls in Britain (for example under the Heath

government). More recently, however, there has been at least a partial acceptance, on the part of politicians, of the tenets of monetarism. Speeches made by leading politicians on demand management in the last couple of years show some understanding of the dangers of operating a too expansionary policy - something which certainly could not be said about most speeches of an earlier vintage. If, indeed, there is an increasing awareness of the way in which the economy works both by politicians and the economists who guide them, there may be less reason to fear the possible combination of wage and price controls with inappropriate demand measures than is commonly supposed; whether this is the case, and whether policies will be wiser in the future, is yet to be seen.

Some would argue that governments are less interested in economic stability than in popularity ratings and will initiate inappropriate demand policies even when their attendant dangers are fully comprehended. The point here is that the government will operate on the information advantage it has (or thinks it has) over the public to gain political popularity. The temptation to do so, it is argued, will be particularly strong prior to election time when expansionary monetary and fiscal policies combined with controls may be able to sustain a high level of employment and a low level of inflation until after the election. The conspiracy theory of government - a theory based on rather different premises to the rational expectations literature - has become

an increasingly popular view (see for example, the book by Buchanan and Wagner[22]), however, I think in this case it attempts to explain more than it is capable of doing. To be sure such a theory offers a satisfactory explanation of some aspects of governments behaviour, yet it seems much more plausible to surmise that (for example) Britain's worst period of inflation was initiated by economic naïveté and not by any desire to fool the public. Furthermore, in many cases an incomes policy is not even necessary to gain the desired political support, for expansionary monetary policy seems to affect output long before its concomitant inflationary tendencies reach their maximum intensity. For this reason there would seem no need to impose controls even if the government's motives are misguided.

More convincing to my mind is the argument which stresses that over expansionary demand policies may be part of the price the government must pay to get trade union sanction for control. Since this issue will be discussed in the following chapter, I will not illuminate on it at this juncture.

(d) A final argument, which may temper the conclusions reached from the discussion of the rotation hypothesis, suggests that controls may increase the danger of the economy overshooting the set unemployment rate target, as demand increases following a period of restraint. On this view policy makers can have a certain influence over the economy

but this influence is insufficient to manipulate the economy as they desire, therefore, there is a danger that too fast an approach towards the unemployment target will lead to overshooting. Since controls allow a faster approach the danger is increased, with the possible implication that controls lower unemployment and inflation during their enactment but only at the expense of increasing them in future periods.

The inadequacy of demand management techniques is widely accepted; monetarists for example often defend their k% monetary growth rule on this basis. It is not entirely clear, however, how serious are the dangers and whether Scarfe[23] exaggerates them in his discussion of a wage and price freeze. Even if the dangers are as potent as he suggests one may still contend the conclusions he reaches do not hold. To my mind the prime function of incomes policies is to either lower the inflation rate more quickly at a given rate of unemployment, to lower the unemployment rate at a given rate of inflation, or some combination thereof. For any one of these aims a policy could operate, and be considered useful, without any attempt to increase the speed of the system when it is moving back towards the natural rate of unemployment. An example will hopefully make this point clear. Modigliani[24] asserts that optimal monetary policy will for a time involve keeping unemployment at a steady rate above the natural rate - the particular rate is of

course determined by the form of the utility function. If controls are introduced, one may now aim for a lower inflation rate as a target, or alternatively, perhaps, hold unemployment at a lower rate than previously before beginning the movement back towards "full employment". On the path back the policy can be dropped, or, preferably, phased out - however it will, if successful, have made the adjustment to a lower rate of inflation less painful than would otherwise have been the case. Having said this it should be realized that the danger of overshooting is present, particularly if the policy is continued too long. Such a danger is also present with some types of indexation schemes.

2.5 Price Controls

Price controls are, to my mind, likely to be less effective than are wage controls and may have more serious deletarious effects on resource allocation. Nevertheless, they may have an important role to play if only because they may be a part of the price paid for union cooperation with wage controls. On this matter, Brittan and Lilley[25] quote the British Prime Minister Callaghen as saying "Pay restraint and price controls, in the eyes of the ordinary people of this country go together." In a similar vein Radice and Lipsey[26], writing from the trade unions point of view, argue wage controls are acceptable only if they are accompanied by price controls.

On an analytical level one could argue that price controls bring a flattening of the relationship between demand and prices, analogous to the flattering of the short run Phillips curve. For such an effect to exist prices must be directly influenced by demand pressure (an issue which will be examined in the next chapter) which means that most price equations in econometric models are inadequate to assess the effects of controls since these equations are based on normal cost pricing.

Price controls may also help by keeping the relationship between wages and prices constant and therefore, prevent or diminish the magnitude of the post-controls explosion. This is probably their most valuable role. Of course these controls can be instituted in a more stringent form than wage controls and thus (ceteris paribus) put downward pressure on profit rates, however, such a policy will lead to strongly adverse effects (which will be outlined in the ensuing chapter) unless of course wages respond fully to the relative fall in prices. In the British case this would seem most unlikely; evidence here, cited by Bacon and Eltis[27] suggests that considerable shifts in the share of profits do occur. For the United States the evidence is similar, thus Gordon[28] writing on the controls in that country says:

> Controls worked not by moderating the behaviour of wages relative to prices, but rather by squeezing profit margins suffifiently to hold prices below their free market levels. This is

not a situation that can be expected to last indefinitely, and hence the very fact of short run "success" for the controls program guarantees its long run failure.

2.6 Controls and Cost Push Inflation

Attention so far has been concentrated on demand initiated inflation; both cost push inflation and the less plausible case of profit push inflation (profit rates in most industrial countries have tended to decline in recent years) have been ignored. Most, though not all, supporters of controls have seen inflation as the product of union or business pressure. In part this is due to a misunderstanding (in particular a failure to recognize that a combination of rising inflation and unemployment is not incompatible with a monetarist analysis of inflation); nevertheless, as argued in Chapter 1, cost push inflation may be an important phenomenon. Whatever the case it will be argued here that controls may be less effective in controlling cost push inflation than is commonly supposed.

In the previous chapter a number of theories of cost push inflation were examined - profit push inflation, however, was ignored since it appears to be so much at odds with the observed facts. One such theory was that which I entitled "arbitrary militancy" where wage claims were, in essence, picked out of a hat. Another more convincing theory is that which suggests real wage frustration is an

important factor in wage determination (for a detailed description, see Chapter I, pp. 51-53). In both cases the authors suggest as a solution the imposition of controls. In theory there would seem little doubt that controls could be of use, and, since demand restraint is thought by many to be ineffectual in such situations, should be imposed. In practise one wonders quite how successful controls would be, since it seems to be an open question whether unions would be prepared to allow governments to lower the growth rate of their real or nominal wage rates (and maybe even cut real wages). It is quite likely that, unless governments can convince unions of the need to reduce their wage bargains, and/or public support for controls is sufficiently strong to force union acquiescence, controls will soon become obsolescent. If they remain in existence there will be severe social conflict, furthermore, even if agreement with the unions is obtained the costs, in terms of concessions, is likely to be very high.

Controls then may be less effective in such a situation than might at first be supposed - these conclusions may be even more applicable to inflation resulting from class conflict (though again the importance of this type of inflation seems to be often overstated). Indeed it may be preferable to use alternative policies. One such alternative is the institution of measures designed to put limitations on the powers of the trade unions; such measures,

to the extent attested by history, seem to have little chance of success (the introduction of the Industrial Relations Act in Britain is instructive here). The other alternative is to use conventional demand restraint measures with the hope that these will succeed. In theory the costs would seem to be high, however, there seems some evidence that the forceful use of demand restraint was effective in the U.S. (and in other countries as well) following the oil crisis. Those countries in which wages responded most strongly to the price hike (Britain, Sweden and Italy) were those where monetary policy was most conciliatory (on this matter, see Gordon[29]).

Prices and incomes policies may have a role in combating real wage resistance (or similar types of cost push inflation); nevertheless, that role hardly seems an assured one. In the case of inflation caused by attempts to maintain or to establish relativities (for example as described by the Scandanavian model) a prices and incomes policy would seem to be an act of folly. There is strong evidence that wage differentials are remarkably stable through time (at least in the short and medium runs); in the British case Godley shows that while in 14 manufacturing industries wage rates rose by an average of 175 % between 1963 and 1974, in 10 of these the rate of increase was within two percentage points of that figure (the largest divergence was in shipbuilding where wages rose by 191 %.). Any attempt to interfere with differentials would seem to be destined for failure, for, as

has been previously indicated the lost ground will sooner or later be made up, and indeed the contraction of differentials would seem to be one of the more dangerous features of the recent controls in Britain. It might be nice to believe a country, in a fixed rate regime, can maintain an inflation rate below the rest of the world by creating increasing differentials between wages in the traded and non-traded goods sectors; to believe this could happen seems to require an extraordinary degree of gullibility.

The last type of cost push inflation to be discussed is "tax push" inflation. I argued (in Chapter I) that workers wages are in all likelihood influenced by tax effects though the precise magnitude seems in doubt. To my mind, the role of wage and price controls is analogous in this situation to the case of real wage resistance - in theory controls can work, in practise they are unlikely to do so. Certainly controls were in operation for most of the 1960s and were unable to prevent profit rates from being squeezed to a marked extent (of course, the causes of the squeeze are various including perhaps the effects of price controls).

All in all, the role for controls may be less important in coping with cost push than with excess demand initiated inflation. Feelings to the contrary stem in part from the unwillingness of most monetarists to admit that

prices and incomes controls may, in theory at least, help when inflation is a monetary phenomenon, and, in part, from a certain naiveté in examining controls in cost push situations.

2.7 Open Economy Considerations

It is time now to examine the role of controls in an open economy both under fixed and flexible exchange rate regimes. As regards the former the first Chapter pointed out that a fixed exchange rate regime will seriously circumscribe a country's ability to determine its own inflation rate. For a variety of reasons (commodity arbitrage, international monetary flows, the international multiplier and international expectational effects) large divergences between countries inflation rates will occur only in exceptional circumstances. Given these restrictions it might be asked what role can wage and price controls play in such a context. In fact four potential roles exist. Firstly, a country may attempt, by running a trade surplus and sterilizing monetary inflows, to run a rate of inflation below the world level. If it makes such an attempt it may use controls to help it achieve this goal. Secondly, a country may have a balance of payments deficit as the result of operating too permissive demand policies; controls may be one of the policy tools used to relieve the deficit. Thirdly, a country may hope, that by continually widening the differentials between wages in the traded and non-traded sectors, it can achieve a lower rate of

inflation than would otherwise be the case; in this case controls could be imposed on the non-traded goods sector. Finally, tax push or other types of cost push inflation, to the extent that they squeeze profits, could provide a case for the imposition of controls.

Since the last two cases were dealt with earlier, attention will be concentrated on the other cases. In the first case the role for controls is likely to be, at best, a temporary one. Sterilization (which will put upward pressure on interest rates) can probably only be used temporarily and furthermore opposition parties could argue that the balance of payments surplus is denying agents some of the goods to which they are entitled. Finally, since prices of traded goods can diverge only to an extent from world levels (see Chapter I) the burden of adjustment must fall on other sectors (either this or profit rates in the traded goods sector must be increasing over time). Given the inflexibility of relativities it is likely that a low level of demand will lead to a lower rate of employment and not to a lower inflation rate.

The second argument for wage and price controls is more convincing. An economy may, for a time, have an inflation rate higher than that of the rest of the world due to a high level of demand (at least in relative terms). Eventually a combination of forces such as the balance of payments deficit and the low level of exchange reserves may

persuade the authorities to lower the inflation rate to a level compatible with that of the rest of the world. Indeed, because the higher inflation rate will lead to a higher price level the country may be forced to run an inflation rate lower than the average for the rest of the world for a time. Demand restraint may be sufficient by itself to achieve the task, however, the addition of controls may lead to a quicker and less painful process of adjustment. Controls in such a situation can be successful and the rotation hypothesis - as described earlier - describes how they may operate. This is, to my mind, the only situation however in which controls can work under fixed exchange rates.

Turning now to the flexible exchange rate case it can be seen that in many ways the operation of controls under this system will resemble their operation in a closed economy. The economy can now determine its desired rate of inflation and controls can be used as part of a package of measures to lower the inflation rate when this is desired. There are two main differences, however, between this and the closed economy case. The first difference is that a flexible exchange rate regime, as Laidler[30] points out, implies that market forces are in control of the exchange sector of the economy. For this reason any excess demand in the controlled sector will spill over into the uncontrolled sector, and by forcing down the exchange rate (relative to what its level would otherwise be), gains in the controlled sector will be,

in part, counteracted by a higher rate of inflation in the uncontrolled sector. Arguments of this type will be discussed more fully in the following chapter, however, there is no reason to believe, as Laidler asserts, controls are close to non-sensical under flexible exchange rates because such an argument applies, if it applies at all, only to price controls. It should be noted that difficulties of this type will also occur in the fixed exchange rate case (to the extent they apply in the flexible rate case) for controls in this case would merely change the time profile of the inflation rate and would leave its overall extent unaffected.

The second difference relates to the large fluctuations which take place between relative exchange rates. Typically, it has been observed that the exchange market is characterized by large swings in the relative value of currencies. If a country's currency is subject to a large fall in value this will put upward pressure on prices and may lead to higher inflationary expectations. If the country is running an incomes policy (as part of its anti-inflation scheme) that policy may come under pressure as a result of these events. It could of course be argued that incomes policy will invoke confidence in the minds of speculators, however, the evidence does not favour such a proposition. In Britain the exchange rate fell markedly in 1976 despite controls being in operation, although in this case controls survived even though subject to strong attack from some

quarters. The implication would seem to be that the importance of this point has, to some extent, to be determined.

2.8 Final Remarks

This chapter has dealt with a variety of issues related to controls. However, because there are many issues yet to be discussed, an assessment of the merits (or otherwise) of controls will be left until later.

Footnotes to Chapter II

1. J. Carr, Wage and Price Controls: Panacea for Inflation or Prescription for Disaster, in M. Walker ed., "The Illusion of Wage and Price Control," Fraser Institute, 1976, pp. 5-51.

2. The costs of unemployment will be largely transitory whereas those of inflation will be permanent.

3. Even if the laymen's fear of inflation is entirely due to misconceived notions (e.g. that real wages must inevitably suffer under the inflationary onslaught) governments may, in practise, be forced to initiate policies to lower inflation for purely political reasons. Therefore, to remain a feasible option, a policy of living with inflation must be convincing not only in economic but also in political terms.

4. A. Okun, "Inflation: Its Mechanics and Welfare Costs," Brookings Papers on Economic Activity, 1975, pp. 351-390.

5. Sir J. R. Hicks, The Crisis in Keynesian Economics, Basic Books, 1974.

6. G. Ackley, "The Costs of Inflation," American Economic Journal, Papers and Proceedings, 1978, Vol. 68, pp. 149-154.

7. H. C. Wallich, "Stabilization Goals: Balancing Inflation and Unemployment," American Economic Review, Papers and Proceedings, 1978, Vol. 68, pp. 159-164.

8. It could be argued that this correlation is due to the imposition of restrictive measures when the inflation rate is deemed to be too high and would not occur if inflation were allowed free reign. Whether such is the case cannot easily be determined.

9. There is, however, a counteracting tendency, i.e., for people to save more in inflationary periods one reason for which is increased uncertainty. In recent periods this tendency, which will have related welfare costs, seems the more pronounced.

10. M. Freidman, Monetary Correction, Institute of Economic Affairs, 1975.

11. M. Walker preface in M. Walker ed., "The Illusion of Wage and Price Control," Fraser Institute, 1976.

12. M. Parkin and J. Carlson, "Inflation Expectations," Economica, 1975, Vol. 42, pp. 123-138.

13. One assumption, which is basic to the method used by Carlson and Parkin, is that expectations are normally distributed. Such evidence as exists suggests this is not so; periods of high inflation, for example, seem to be characterized by a larger number of "high guesses" than is compatible with the normal distribution. In consequence the Carlson and Parkin method will underestimate expectations in periods of high inflation. For more detail on this and other matters, see - J. Foster and M. Gregory, "Inflation Expectations and the Use of Qualitative Survey Data," Journal of Applied Economics, Vol. 9, 1977, pp. 319-329.

14. T. W. McGuire, On Estimating the Effects of Controls, in K. Brunner and A. Meltzer ed., "The Economics of Price and Wage Controls," North Holland, Amsterdam, 1976, pp. 115-156.

15. R. G. Lipsey and M. Parkin, Incomes Policy: A Reappraisal, in M. Parkin and M. Sumner eds., "Incomes Policy and Inflation," Manchester University Press, 1972, pp. 85-111.

16. F. J. Reid, The Expectations Hypothesis of the Phillips Curve and the Rotation Hypothesis of Incomes Policy, Empirical Tests and Policy Implications, Doctoral Dissertation, Queen's University, Kingston, Ontario.

17. L. G. Godfrey, Some Comments on the Estimation of the Lipsey-Parkin Inflation Model, in M. Parkin and M. Sumner eds., opus cit., pp. 138-150.

18. In theory the authorities will also have control over the wage norm and can adjust it to a level sufficiently low as to make the chance of a perverse effect minimal; in practise matters may be more complex for the following two reasons. Firstly, to a greater or lesser extent the norm may be decided not by the authorities but by the dictates of the unions and big business. Secondly, even if the authorities can set a norm, if it is set "too low" it may not be treated seriously by the unions and will thus be ineffective.

19. F. J. Reid, "An Analysis of the Effectiveness of U.S. Wage and Price Controls and Implications for Operation of the Canadian Program," Anti Inflation Board: Discussion Paper, 1977.

20. S. Weintraub and H. Wallich, A Tax Based Incomes Policy, in S. Weintraub, "Keynes and the Monetarists," Rutgers University Press, 1973, pp. 103-124.

21. W.A.H. Godley, Inflation in the United Kingdom, in L.B. Krause and W.S. Salant, "Worldwide Inflation," The Brookings Institution, 1977, pp. 453-473.

22. J.M. Buchanan and R.E. Wagner, Democracy in Deficit: The Political Legacy of Lord Keynes, New York, Academic, 1977.

23. B.L. Scarfe, Price Determination and the Process of Inflation in Canada, Prices and Incomes Commission Study, Ottawa, 1972.

24. F. Modigliani, "The Monetarist Controversy or Should We Foresake Stabilization Policies?," American Economic Review, 1977, pp. 1-19.

25. S. Brittan and P. Lilley, The Delusion of Incomes Policy, Temple Smith, London, 1977.

26. G. Radice and D. Lipsey, A Trade Union's View of Workeable Incomes Policy, in F. Blackaby ed., "An Incomes Policy for Britain," Heinemann Educational Books, London, 1972, pp. 175-186.

27. R. Bacon and W. Eltis, Britain's Economic Problem: Too Few Producers, Macmillan Press Ltd., London and Basingstoke, 1976.

28. R. J. Gordon, "Wage-Price Controls and the Shifting Phillips Curve," Brookings Papers on Economic Activity, 1972, pp. 385-430.

29. R. J. Gordon, "World Inflation and Monetary Accommodation in Eight Countries," Brookings Papers on Economic Activity, 1977, pp. 409-468.

30. D. Laidler, The Exchange Rate Regime and the Conduct of Anti-Inflation Policy, a paper sponsored by the Queen's University, Summer 1976, Money Workshop.

CHAPTER III

WAGE AND PRICE CONTROLS: SPECIFIC ISSUES

3.1 Introduction

The use of wage and price controls has been very strongly attacked by a number of authors in recent years. It is argued that not only are such policies based on incorrect theoretical underpinnings but that they may cause serious damage to a country's economic and social institutions as well. Some, indeed, would go so far as to say that many of Britain's economic problems arise from her persistent use of wage and price controls in recent years. This chapter will, in large part, address itself to the points the critics have raised and will argue, that despite the simplistic way such points are often stated, there is indeed a strong case to be made against the use of controls. In order to "set the scene" there will be a short initial section on the various types of control schemes which can be imposed.

3.2 Types of Control Schemes

The concept of wage and price controls (a concept which is used synonymously with incomes and prices policy in this thesis) refers not to one particular policy but to a vast number of different policies which all attempt to directly lower the rate of growth of wages and/or prices in

the economy. That the word controls describes a heterogeneous group of measures is a point which should not be ignored for the benefits and the costs of any period of controls are, in considerable degree, related to their nature. With this in mind the following section will attempt to delineate different types of control schemes and shed some light on how these differences may influence the associated benefits and costs.

One method of categorizing wage controls (and price controls) is according to their degree of "formality". Such a procedure is used by Burton[1] who enumerates the following seven categories:

1. "Government exhortation for voluntary adherence to designated patterns of behaviour."
2. "The surveillance, analysis and public exposure of 'undesirable' wage and price movements."
3. "Active governmental denunciation of non-cooperative behaviour."
4. "Paradigmatic behaviour in the public sector."
5. "The extraction of commitments to voluntary compliance."
6. "Governmental intimidation and deterrence."
7. "The use of legal powers and sanctions."

The first two named are based entirely on a passive mode of behaviour by the government - "letting the facts speak for themselves". The third and fourth involve more active involvement with the fourth implying the government uses its power as

an employer to influence public sector wage claims. The fifth (which was tried between March 1974 and July 1975 by the incumbent Labour government) relies on the government's ability to extract agreements from the unions that wages will not exceed certain levels, while the sixth accompanies this with the threat of tougher measures (in the form perhaps of a freeze, higher unemployment, higher taxes) if guidelines are not adhered to. Finally, the seventh category is the only which is, strictly speaking, compulsory. Policies of this type are accompanied with legal powers which may include the power to fine, or, in some circumstances, even to imprison.

The above index shows one way in which policies can be distinguished. However, since most recent policies have been of Type 7, yet have been by no means homogeneous in nature, some further criteria for differentiation seem in order. One such criterion is concerned with the degree control schemes give scope for exemptions. On the one hand, one may have a system which has legal backing and in which there is little or no room for exemptions while on the other there may be policies which too have legal backing but which give a variety of grounds for exemptions (e.g., for productivity increases, for low paid groups and in the event of labour shortages). In fact it is typical for any period of a policy to have an initial "very tight phase" which is succeeded by phases which allow more and more exceptional cases (perhaps in an attempt - some would say a futile attempt -

to replicate the functions of the market).

A further respect in which control schemes may differ is the degree of severity with which they are enforced. In some senses of course this is very similar to the first criterion, in others this is less so. For example, the last phase of controls under the Wilson government (from 1964-1970) was put under attack by the unions yet industrial action was far less severe than in the last phase of the Heath government's controls because the latter government was prepared to stand up for the policy to a greater extent than was the former. More generally, it seems the longer is any period of controls in operation the greater, in general, will be the pressures against it. Thus, the degree to which the government is prepared to stand up to union and business action is important in determining the likelihood of success and even more so the degree of conflict which will arise (a point which will be substantiated later).

Wage controls can differ in other senses, for example in the degree to which the norm is based on absolute or percentage terms - an important point in considering the extent to which allocative distortion will occur. Further, in recent years various "novel" types of incomes policies have been suggested the most important of which is the Tax Based Incomes Policy (TIP) which will be discussed, briefly, later. Although schemes of this kind can be classified as Type 7 and also as policies which, in one sense, do not allow exemptions this does not distinguish them clearly from other,

very different, policies which too can be similarly classified. What is distinct about TIP is that it attempts to use the market in order to avoid the allocative distortions associated with conventional policies while offering, at least in theory, the possibility of exerting a substantial downwards bias on wage settlements.

Price controls, like wage controls, can be differentiated by the extent to which they are voluntary or legal, by the degree to which they are enforced (if legal) and by the room they allow for exceptional cases. It should be noted however, that prices can be controlled indirectly through profit margin controls; these it will be argued are likely to be less effective in lowering the measured inflation rate but are also less likely to cause severe allocative damage.

Controls then can be of a variety of different types. However, categorization is of more than trivial interest since the type of controls in operation indicates, to some extent at least, the degree to which wages and prices will diverge from the levels they would otherwise have reached. Typically, it would be expected that controls which are based on legal sanction, have union and business support, are strictly enforced by the government and give little scope for exemptions will bring greater benefits, in general (and greater costs too), than when one or all of these conditions is not fulfilled. As will be seen in the succeeding chapter policies which are voluntary often have little or no influence on wage or price determination.

3.3 Distortions to Market Signals and Resource Misallocation

(a) A Simple Economic Model

The most usual objection to the use of controls is that they are incompatible with effective resource allocation. To illustrate this point, the following section will present a simple model of the economic system and show how resource misallocation will result from the introduction of controls. A further section will modify the model to make it more "descriptively realistic" and consider controls in the light of the modifications.

The simplest model considers two sets of organizations households and firms; both it is assumed are maximizers of well defined objectives operating in a world of certainty. Households (who, it is supposed, act to maximize a utility function), in deciding the amount of any particular good they purchase, take into account, among other things, the price of that good, the price of other goods, tastes and income. Theory predicts that (if the income elasticity of demand is positive - which is considered the normal case) as the price of the good in question rises, less of that good and of goods complementary to it will be purchased and spending will be switched towards substitute goods. Price therefore acts as a signal to the household to alter the composition of its consumption bundle; a high price (in relative terms) shifts consumption away from the good

in question and a low price shifts consumption towards it.

Firms, which are assumed to maximize profits, will hire a factor until the marginal quantity produces a return equal to its price. Since in this model we assume perfect competition, the firm will face a perfectly elastic demand curve and will produce until the marginal cost curve intersects the demand curve from below. An increase in demand will, by raising price above its previous level, act as a signal to produce more of the product in question. Furthermore, producers of other goods, will be attracted into the industry by the prospect of economic profits to the extent that in the long run these profits will be eliminated.

If we now consider the two sets of organizations in conjunction, a number of powerful conclusions can be drawn. In particular, one can gain some intuitive understanding of the seemingly implausible notion that a system which allows firms and households to make decisions in accordance with their own desires, can achieve an efficient, and, under certain admittedly rather restrictive conditions, an optimal allocation of resources. An increase in demand for any particular product will, by raising the price of that product, encourage consumers to consume less and producers to produce more of the product, this will, except in exceptional cases, be sufficient to keep supply and demand always equal to each other. For this reason there will never be any "shortage" of the product in question.

That the price system is able to achieve an efficient allocation of resources is remarkable, what is even more remarkable is that it is an almost impossible task for any centralized authority to replicate these functions. Given the vast numbers of goods on offer and the even more vast number of interrelationships between the demands for these goods (the demand for any product will be influenced by the price of many goods as well as its own price), the information and resources necessary to replicate the price mechanism would need to be immense and are probably unobtainable. This is what Grayson[2] has in mind when he states that the North American economy is the "most sophisticated information system that the world has ever seen".

(b) The Effects of Controls in the Above Context

The analysis will commence by looking at the allocative distortions which can arise from the use of price controls. The case of a price freeze is examined first. There are two cases to be considered here; the first is where the freeze allows price increases which are compatible (we are talking in aggregative terms here) with those which market conditions determine, the second is where the freeze does not allow such increases. At an initial glance one would suppose the first case would avoid any allocative problems, however, this need not be so for many individual prices will rise faster than the aggregate rise in prices and therefore may rise faster than the freeze permits (there is some evidence

on this point in an article by Poole[3]). Therefore, although in general the freeze will have no effect, it is likely that it will be effective in a number of specific cases. The implications for those goods for which the freeze is effective will be examined below.

The case, however, which is most usually considered by opponents of controls (since it is more amenable to the conclusions they wish to draw) is where controls hold the inflation rate below that needed to clear the market. One example where this would occur is where controls are imposed in conditions of expansionary monetary policy and are imposed to limit price increases to below the observed inflation rate. Controls in these circumstances would be expected to cause allocative distortions, unless their effects can be avoided, since the resultant lower price indicates to consumer to purchase more than the equilibrium quantity and to the producer to produce less than that quantity. In many cases controls can be avoided, in particular, as Carr[4] points out, "price controls only fix price to the quantity of the good, the other dimensions are left free to respond to economic conditions." For this reason one might expect quality deteriorations, perhaps through the use of inferior materials, a lessening of quantity or the charging for services which had previously been complementary with the purchased good (the above author provides a number of examples of these phenomena). That evasion may be able to bypass the effects of controls and give the price index an

artificial downward bias (a bias which will be removed when controls are taken off) is not in doubt, however it should be realized that there are costs as well as benefits associated with such a strategy - these include the allocation of scarce talent to finding means to avoid controls. Indeed, it is unlikely that complete evasion would be the optimal strategy for the firm (even if such a strategy were practicable) particularly if the products it produces are relatively standardized. For this reason, although, to some extent, there will be tendencies for the effects of controls to be avoided, it is unlikely that this evasion will be total. It should also be noted that evasion may be much easier if less strict forms of controls are imposed and indeed, if controls are "voluntarily" imposed evasion may be open and complete rather than surreptitious and partial.

To the degree that evasion occurs, controls will not distort the allocative mechanisms of the market system. There is considerable reason to believe however (both a priori and empirical), that evasion will not be complete and this is the case to which I now turn. It is when controls are effective that their effects can be most harmful, for their very effectiveness will tend to lead to increases in the quantity of goods demanded and reductions in the amount supplied. To the extent that there remain uncontrolled goods these shortages may not be too severe (one example of an uncontrolled sector, which was instanced earlier, is of imports in a flexible exchange rate regime) -

although the utility of consumers will be below the optimum level - since some of the excess demand present in the controlled sector will be transferred to the non-controlled sector where prices rise faster than would have otherwise been the case. If, however, all products are controlled shortages will develop and the more effective are the controls the more severe will be the shortages. These will lead to an increasing amount of time being spent on making purchases and is likely to lead to partiality in the allocation of goods (which a well functioning market mechanism avoids). Further, because workers are unable to buy all the goods they nominally demand there will be an incentive, especially if the controls are expected to be of long duration, to reduce the supply of labour which in turn will reduce output and further intensify shortages - this is the case of the supply multiplier analyzed by Barro and Grossman.[5] Finally, there is also a likelihood that black markets will grow up (there are numerous examples of black markets in the Communist countries) with their attendant problems. It is also possible that these and the other evasive measures will lead to decreasing respect for the "rule of the law" which will spread into other areas.

Under certain circumstances rationing may come into force and this will further restrict consumer choice (particularly if points are issued on a good to good basis). Any such scheme will be costly and will be subject to political manipulation - those with the most political power are

likely to fare best under a system of rationing.

These are some of the allocative distortions price controls can bring about and no doubt there are many others which have not been mentioned. At this juncture I wish to deal briefly with one type of distortions which have not yet been examined. Price controls make the complex process of dissemination of information less efficient, for on the one hand consumers can no longer indicate to producers which products should be produced, while on the other there will no longer be an incentive for producers to produce products as efficiently as possible. It seems very likely that the authorities will increasingly have to intervene in the process of resource allocation (for example to allow "special" price increases) and this will lead to further detiorations in allocative efficiency, since decisions in one area are likely to have ramifications throughout the economy. Furthermore, the very fact that certain price increases are allowed while others are not will lead to an increasing feeling of injustice and may explain why controls become increasingly unpopular the longer they are in operation. Overall then controls will lead to increasing inefficiencies and in all likelihood decreasing respect for the government which instituted them.

The above has considered the case of price controls however it is rare for price controls to be imposed without accompanying wage controls and it is to the latter I now turn. Essentially the case of wage controls is largely

analogous to that of price controls. There will be incentives for avoidance - perhaps through adjustments in hours worked or in overtime payments - and this may occur even if there is no likelihood of shortages (employers anxious to avoid unrest may attempt to pay increases similar to those that would otherwise have been obtained - see Flemming[6]). Furthermore, if controls are effective there will be an excess demand for labour, which will be particularly acute in areas where work is relatively standardized (these problems will be intensified by changing patterns of labour demand such as occurred following the oil crisis). Finally, if controls are framed in absolute terms - a tendency which has become increasingly prevelant in recent years - these distortionary effects may be seriously intensified. On the one hand workers in "marginal" jobs may find themselves priced out of the market (for the norm tends to act as a floor as well as a ceiling), while on the other there will be an excess demand for workers in higher paid jobs (and possibly a reduced supply - through emigration or an increased preference for leisure).[7]

3.4 Wage and Price Controls vs. Wage and Profit Margin Controls: A Preliminary Assessment

The previous pages have indicated a variety of ways in which resource misallocation can arise at both the micro and macro levels when price controls and/or wage controls are imposed and are in some sense binding. The present section will discuss the effects of a combination of wage and price controls and then will contrast these with a combination

of wage and profit margin controls.

In part, the effects of wage and price controls will depend on the relative severity with which the two are enforced. Consider first the case where the two are enforced with equal severity. In this case the misallocative effects of price controls will be somewhat less intense than otherwise since profit margins are squeezed only to the extent (and this may be quite considerable) that the price of inputs in the production of goods rises faster than the allowable price increase (inputs may be imported goods or alternatively goods exempted from controls). In the extreme, and implausible, case where this does not occur and where there are no substantial shifts in relative demand through time, the micro distortions caused by price controls will be relatively small though there will still be macro distortions since prices are rising more slowly than is compatible with the given rate of money growth. There will also be an excess demand for labour which makes the continued operation of controls extremely doubtful.

When price controls are enforced more severely than are wage controls allocative distortions are likely to be more serious particularly those of an inter-temporal kind (arising from reduced investment - an aspect which will considered later). It should be remembered too that many of the previous assumptions were extremely implausible (for example that regarding input prices) and therefore micro distortions are also likely to be of importance leading to

many of the inefficiencies described above.

Profit margin controls are usually preferred to price controls on allocative grounds though in the case where wages are not controlled they may do little, if anything, to control inflation. Indeed, if wages are not controlled distortions may be quite small for as Darby[8] points out:

> this method of control permits a pure inflation in which prices and costs rise in proportion. Only where the ratio of net income to cost rise sharply should the classic price control effects be expected.

Profit margin controls may, however, cause allocative distortions and for a variety of reasons. In the first place, if accompanied by effective wage controls, in this model at least there will be a shortage of goods - since prices can rise less quickly than is consistent with the prevailing monetary and fiscal stance. In the second place, there are good reasons why profit margins should diverge for the purpose of efficient resource allocation in both the short and the long term. As regards the former profit margins should diverge, temporarily, from their normal levels following an increase in demand for a particular product (this is the case of changing patterns of demand); any attempt to control profit margins will, to the extent it is successful, impede efficient resource allocation in such circumstances. As regards the latter certain industries are subject to a greater risk factor than are others and a higher profit margin is necessary to compensate for this. Controls will discourage enterprise of a risky

kind and will therefore raise the natural rate of unemployment.

A further type of resource misallocation which may arise from the use of profit margin controls is the following. Profit margins tend to be phased with the course of the business cycle (i.e., they tend to increase during the upswing, or its initial portion at least, and decrease during the downswing); if controls are imposed in the downswing and continued into the upswing profit rates will probably fall below the levels they would otherwise have reached (assuming that controls did not allow profit margins greater than those which had previously existed when they were first imposed). For this reason, there is the possibility of a lower rate of capital accumulation due both to liquidity considerations and diminished incentives.

3.5 Controls in the Context of Imperfect Markets

Consideration so far has been given to a model of the economy in which there is little, if any, positive role for controls to play and indeed where their use can lead to serious problems of resource misallocation. The following section will look at rather more realistic models to see how sensitive conclusions are to the assumptions on which they are based. In particular two related points will be emphasized: 1. Markets do not, in most cases, operate as the model suggested, 2. Controls may be binding yet still allow prices and wages (considering these categories in

aggregative terms) to rise at the market equilibrium rate.

(a) The Determination of Prices and Output

The analysis looks at more realistic models of price and output determination and examines the role of controls in these circumstances. Before coming to the heart of the analysis attention is briefly focused on the behaviour of a monopoly under controls.

Earlier we assumed that firms were perfectly competitive, the alternative extreme textbook assumption is to assume the firm to be a monopoly. Essentially, a monopoly will, ceteris paribus, produce less output than a perfectly competitive firm and charge a higher price. When subject to controls output will in fact increase (with no associated shortages) as long as the price fixed is above the intersection of the marginal cost curve and the demand curve (and also exceeds average variable costs). If price is fixed below this level output may still increase, however, this will be accompanied by shortages. Thus, in a partial equilibrium framework, controls on a monopoly may be beneficial in terms of resource allocation. Since, however, we are assuming that markets normally clear shortages will occur if controls are imposed on monopolies (and this will be so even if all firms are monopolies) for resources will flow towards the monopoly leaving fewer resources in the rest of the economy. The situation of labour monopolies (trade unions) is in theory analogous though it was argued in Chapter 1 that wages in the

non-unionized sector are unlikely to respond in entirety to developments taking place in the unionized sector.

The monopoly model predicts certain conclusions different from the perfect competitive model, however, the overall message is the same, this being that price controls, if generally binding, lead to shortages. The view taken here however, is that the monopoly model, even more so than the perfectly competitive model is not generally applicable to real world situations and an alternative is therefore suggested. Essentially, this alternative suggests there are two market forms which will be entitled flex price and fix price respectively (fix price is understood to mean that prices are rigidly fixed but that they adjust at discrete intervals). In the former, behaviour is similar to that characterized in our earlier model for the firm will, in the face of a demand shift, adjust its price such as to equate, at all times, actual and desired stocks. Put simply an increase in demand will lead to an increase in price with this latter increase acting as a signal to increase production.

It is important to realize that markets of this kind pertain only to a subsection of the economy and indeed until recently there was a belief in some quarters that such markets did not exist outside economics textbooks. That such a presumption was incorrect is not in doubt but the fact that it was made in the first place serves only to indicate that flex price markets are not representative of the economy in general. In reality these markets seem to be concentrated

mainly in asset markets, primary commodities and agriculture where, in general, supply is fairly inelastic - at least in the short run.

Manufacturing industry, however, seems to be characterized by the fix price market. In these an increase in demand will have its initial impact on output and only later, if at all, on prices (of course, there will be indirect influences on prices through the labour market). Thus, in periods of high demand stocks will tend to decumulate and in periods of low demand stocks will accumulate with the implication that, in general, supply and demand are not equalized. The rationale for the slow response of prices to demand fluctuations is not entirely clear though on the one hand Phelps and Winter[9] attribute this to informational costs while on the other Okun[10] emphasizes this is part of an attempt by the firm to influence the customers search behaviour.

Some have argued (Godley and Nordhaus[11]) that prices are independent of any direct influence of demand factors. It is shown that when costs are normalized - purged of cyclical elements - demand has been a statistically insignificant factor in explaining price changes in British manufacturing industry, although it is also seen that the coefficient on normal costs is significantly below the expected value of unity (this latter result can be explained in a number of ways, for example, it may be due to declining profit rates). The Godley and Nordhaus conclusions have been

subject to a variety of criticisms (see for example Laidler and Parkin[12]) on both theoretical and empirical grounds. Regarding the former, it is not clear what the rationale for normal cost pricing is, for unless normalized costs and expected costs are identical (this presumes that cyclical fluctuations are thought to be transitory) the latter would seem to be preferred explanatory variable. Turning now to the empirical side, the insignificance of demand seems to be dependent on the use of normalized costs, for when actual costs are used (which will be below normalized costs in the cyclical upswing), demand is usually found to be significant - indeed some authors (see Smith[13]) have suggested that there is a natural rate of capacity utilization. Whether these reasons are sufficient to reject the normal cost hypothesis is not clear, for it does seem strange that the upward pressure on prices from the effects of positive excess demand should be just sufficient (at least in statistical terms) to cancel out the downward pressure on prices from reductions in actual costs per unit. The final verdict on the role of demand on manufactured goods prices is thus somewhat in doubt, at least in the British case.

(b) The Use of Price and Profit Controls in Fix Price Markets

Since demand and supply are not always equalized in fix price markets it is conceivable for controls to be binding while there is still excess supply throughout the

economy; this seems to have been a feature of many periods of controls in Britain. If, however, controls are imposed in expansionary circumstances one would still expect shortages at the macro level (and the micro level, as well) with the result that waiting periods will be longer than would otherwise be the case (even in normal circumstances order books will be lengthened during the upswing).

Turning to the micro level it is not entirely clear how controls will affect supply in this case. In ordinary circumstances, if demand for a particular product increases relative to that of other products, output will respond first and price only later, if at all - which will lead, as noted above, to increasing waiting periods. Price controls will intensify the shortages, if only because they increase demand for the product in question, though the response of supply may be small since prices do not act as signals to increase production.

Even if the negative response of supply to controls in fix price markets is small controls can still cause serious damage both in conditions of excess demand and excess supply (this is leaving aside the considerations noted above). If a certain input becomes more expensive the final good price will also increase (since costs, at least normalized costs, will be passed on in higher prices) and for this reason less of the good will be consumed. If price controls are used there will be a reduced incentive to conserve on the consumption of the good in question. Furthermore, price controls

unless accompanied by wage controls, are likely to lead to a diminishing share of profits which in turn will discourage investment (this will be analyzed later) - this is perhaps the area in which the use of price controls in Britain has had its most serious effects.

Earlier it was suggested that if profit margins were controlled, instead of prices themselves, the consequences would be less deletarious. Such a conclusion is true in the fix price market as well as the flex price market. Distortions will not be eliminated, however, and will be of the same type as highlighted earlier, e.g., controls act to discourage risky enterprise and may lower capital formation in the upswing.

(c) Wage Controls in Imperfect Markets

Although the original model may have overstated the resource mis-allocation caused by price controls (its conclusions seem applicable to flex price markets and would help explain the shortages of some basic types of foods in the Communist countries, for example) a more realistic model still suggests the role for price controls is rather limited. In the case of wage controls I shall argue that the introduction of more realistic assumptions may lead to significantly conclusions about the desirability of these controls, nevertheless, they can still cause serious allocative damage if used incorrectly.

In the earlier model it was assumed wage controls were imposed in conditions where they were inconsistent with the given rate of monetary growth. However, this is not the only case in which they may be imposed, for, as argued in the first and second Chapters the labour market is characterized by sustained periods of excess supply caused by the slow response of wage settlements to demand restraint (there may of course be other causes as well). For this reason it is quite conceivable that wage controls may be effective and still allow increases in the wage aggregate consistent with the given rate of growth of the money supply and indeed this was the main case in which I argued (in the previous chapter) they may have a role to play. This does not imply that wage controls will not in practise cause allocative distortions (in the case where demand policies are expansionary these will arise) rather it implies that in certain circumstances the macro distortions they cause may be very small if indeed there are any such distortions at all. The point here is that if wage controls are used as a complement and not as a substitute for demand restraint, they can, with some qualifications, be considerably more useful than some would suggest. In such a situation price controls can be used to maintain relative shares without attempting to reduce profit margins - this seems their most appropriate role.

Some opponents of wage controls would argue that in such a situation, although at the macro level wage controls seem an acceptable form of policy at a micro level their use

will cause distortions. If controls are framed in absolute terms (as may be necessary to gain union support) this is certainly a valid argument, and should not be lightly dismissed. On the other hand, if controls are framed in percentage terms the dangers may be less intense for, as has been previously pointed out, differentials seem to be relatively stable, certainly far more so than can be explained by market factors alone. This does not mean that there will be no problems involved; two examples where difficulties arise will be given below.

One difficulty, which was particularly apparent in the period following the oil crisis, is where large changes in commodity prices necessitate changes in relative wage patterns to restore equilibrium. It may well be, that even if controls are not imposed, such changes would come about, if at all, only very slowly, however, when the group concerned realizes its changes position (as did the coal miners in 1973) it will push for increases in its nominal wage which may put pressure on any controls policy. Apart from the allocative aspect, the government will be put under considerable pressure by the concerned group and may be forced to make an exemption as a special case. This, however, will make other groups feel they are being unfairly treated and may lead to higher claims from these with the result that the policy becomes under increasing pressure.

One may of course argue that the above is somewhat of an exceptional case and that, in general, there is

no need for large shifts in relative wages; this leads to the second point. It seems that in almost every period of controls there has been some group which has suffered, or believed it has suffered, as a result of controls and which is prepared to take industrial action, if necessary, to back up its case. Proponents of controls can point out the particular group concerned is somewhat special, yet it seems that in almost every case there is some special case to be considered and further that once this group has achieved its aims this leads to a flood of rival claims (an analogous argument can be applied to price controls). Whether this is inherent in controls themselves or is due to the way they have been applied is not clear, what does seem clear is that for this reason (and for other reasons to be discussed in a later chapter), permanent controls, even if deemed desirable, may be unenforceable.

(d) Some Interim Conclusions

In so far as any conclusions can be reached these would seem to be that controls do indeed have allocative costs the extent of which will depend on the type of controls used, the severity with which they are enforced and the conditions in which they are used. In some cases the effects of controls may be particularly intense (a possible example is in Germany between 1945-48 though this episode is open to other interpretations) though more normally it is difficult to assess how severe are the costs since they are not usually readily

apparent. What does seem apparent is that controls of any kind are likely to run into problems and that these problems will be intensified the longer controls remain in operation. This, however, implies not that controls should not be used but that controls cannot (and almost certainly should not) be used on a permanent basis. In fact, the overall conclusion to this section is that if the only difficulties associated with controls were of the kind mentioned above there would still be a case for the use of controls given that each particular scheme was formulated with sufficient care.

3.6 Tax Based Incomes Policies

Various schemes have been suggested which are designed to avoid the allocative problems conventional types of controls cause, of these the most popular is TIP. Since this type of policy has been covered thoroughly in a recent journal[14], I will deal with it but briefly; one point, however, should be made clear and this is that since TIP has not been applied as yet (though the present controls in Britain have such elements) many of its supposed qualities or defects (it is obvious from the Brookings articles that authors are by no means unanimous on the gains and costs associated with TIP) may in fact be illusory.

Under a TIP scheme there is a set norm for wage increases which can be legally exceeded as long as the firms

concerned are prepared to pay an extra increment of tax, the size of which is dependent on the amount the norm is exceeded by. This it is suggested will "stiffen the backbone of industrialists"[15] to resist excessive wage increases. Since the norm can be legally exceeded it is suggested that many of the allocative distortions inherent in conventional policies can be bypassed.

There are several grounds on which TIP has been criticized. In the first place it is suggested that the administrative problems associated with TIP would be insoluble; this criticism will not be considered here. A second line of attack argues that there will be a tendency for firms to shift the extra tax they have to pay by raising prices and therefore TIP will have potentially perverse effects. While in a monopoly model, as Isaard[16] points out, this shifting would not occur it is possible that in a world of uncertainty, as Isaard again notes, shifting of some order of magnitude is likely. Perhaps the best defence of TIP from this argument is given by Seidman[17] who argues that although shifting may be a problem in the short run, in the long run it is less problematical since it requires not just a higher corporation tax rate but an increasing tax rate; so if TIP can be a long term policy (which Seidman suggests it should be), the effects of shifting may be relatively minor. If on the other hand it is used in the short run shifting remains a problem.

A third criticism points out that while TIP provides an incentive for firms to make lower wage settlements it provides no such incentive for workers, unless one considers lower profit rates affect wage bargains. If profit rates do not influence wage bargains little may be gained especially as the tax gained will be redistributed to firms in order to avoid aggregative effects on investment. A final criticism would suggest that although TIP may influence wage determination it need not influence price determination and thus profit rates will tend to increase. Given unions sensitivity to such increases it is likely that price controls (with all their concomitant effects on resource allocation) will have to be imposed, which negates much of the purpose of TIP in the first place (see, however, Wallich[18]).

These criticisms are not meant to imply TIP cannot work, for there are many possible counter arguments, rather the implication is that TIP, like any other form of controls, is subject to a variety of problems. Again it should be emphasized these problems may be, at least partially, of trivial importance were TIP to be used.

3.7 The Long Term Effects of Wage and Price Controls

In recent years there has been a new, and in my opinion, important line of attack on the use of controls. This view received its most clear statement in an iconoclastic article by Lipsey[19] and while I believe that at times

he overstates his case for the sake of dramaticism the views he presents seem fundamental to a discussion of controls.

Lipsey argues that the major problems associated with controls are not the short term ones of resource misallocation and administration costs (the latter has been ignored in this thesis), for important as they may be, they are minor compared to the long term effects controls bring about.

The first of these effects is that certain elements of controls may remain in operation long after the controls system itself is removed. Lipsey emphasizes as an example (though he does not provide any evidence on the point) rent controls which he argues will become increasingly difficult to remove the longer they have remained in operation. The effects of rent control are well documented elsewhere, and certainly show very clearly the dangers price controls can cause when they are applied in flex price markets (particularly if they remain in operation after the rest of the control apparatus is removed). Indeed one author (Lindbeck quoted in Lipsey's article) has been led to say "In many cases rent control appears to be the most efficient technique known to destroy a city - except for bombing."

Even more serious is the way controls can influence the determination of economic and social policies. In particular, it seems that controls are unpopular amongst

trade unions - though not always with the population at large - and these will demand certain "quid pro quo" measures in return for acceptance of restrictions on collective bargaining. Given this scenario the government has essentially two choices open: (a) to impose controls on unions and hope that public opinion will be sufficient to persuade union leaders to abide by them, (b) to provide sufficient "incentives" to gain union support. Both methods, have been attempted in Britain; both can have very serious consequences.

The Heath government (1970-74) attempted the first method. Controls were used as part of that government's strategy of "going for growth" and many considered them as a key element of a sensible policy package; the interpretation given here is otherwise (these topics will be addressed in rather more detail in Chapter 5). In the first place unions were viewed as the culprits of the inflationary process (later such a role was given to import prices), and indeed many would still view them in these terms. This in itself, is one of the deletarious effects of controls, for all too often one section of society is blamed for something which, in no small measure, is not its fault. The sharp class divisions, and general distaste for unions, in Britain has many causes; but it is not unreasonable to suppose that controls have been one such cause.

Eventually, as is well known, the Heath controls culminated in the miners strike of 1973-74 and the ensuing

General Election of February 1974. That controls can have such a strong influence on the political affairs of a country must be seen as one of their most serious faults particularly as it obscures attention from policy choices in other areas of the economy (the present Labour government seems headed for a situation similar to that which faced the Heath government despite its attempts to cooperate with union wishes) and leads to an election based on issues such as "Who rules the country?"

The inference of the above appears to be that an attempt to enforce controls on parties against their will (this despite the fact that the Heath government did in fact accompany wage controls with fairly extensive price controls) is unlikely to be successful, at least if it is often attempted, and may lead to serious political repercussions. It is therefore, worth looking at the alternative strategy, i.e., that of adopting a conciliatory strategy towards the unions with the aim of acquiring their acquiescense towards controls.

At first glance such a strategy appears to be a less painful alternative, however, its consequences may be more damaging than those associated with "union bashing". The reason is that union support will in all likelihood be dependent on the granting of many concessions and these concessions will become increasingly unpalatable the more times the strategy is attempted. Such concessions may involve the use of rent controls, closed shop legislation,

nationalization or a variety of other measures (some of which will be examined below); even more important, for our purposes, they may involve the imposition of more expansionary demand policies than would otherwise prevail. If this is indeed the case (I shall argue in Chapter 5 that unions do demand expansionary policies though they are not always successful in achieving their goal) the effects of controls on inflation will be less favourable than has previously been suggested particularly if the government is forced to lower unemployment below the natural rate. For this reason econometric assessments may give an over favourable estimation of the benefits of controls.

Another "quid pro quo" measure which may be insisted upon is a reduction of inequality (again the Heath government attempted to do this even though controls did not have union support). As has been argued earlier this will, if successful, lead to higher unemployment and may lead to dissatisfaction, particularly among those groups most affected (Lipsey suggests a lot of the recent wave of middle class militancy in Britain has at its roots the fact that this group has suffered most from the imposition of controls). Furthermore, it seems undesirable that income distribution should be determined by union dictates and not be democratic processes (some of course would suggest income distribution should be left to market forces) particularly as union views on income distribution may not accord with those of the general population.

The final "quid pro quo" measure to be discussed here relates to the use of price controls. It is argued that these, by reducing profit rates, may have a serious adverse effect on investment levels. In the earliest periods of British controls, the emphasis was on curtailing the growth in wages (indeed meaningful price controls were not used until 1966) and, therefore, the argument is of little relevance - indeed, capital was in many cases, the beneficiary of controls. More recently it does appear controls have put downward pressure on profit rates (for example during the period March 1974- July 1975 when, in part for this reason, real wages rose very significantly), Lipsey argues that this is fundamental in explaining the "investment strike" noticeable in the U.K. at that time and further suggests, that because the assured life of a government is much less than that of the capital stock, there are political gains to be made from pursuing such a policy. This argument might be countered by asserting that the effects of price controls on profit rates are transitory and the latter will move back to their original level when controls are removed. The difficulty here is that if controls continue to be used as regularly as they have been in the U.K. in recent years, investment will be curtailed for long periods - as indeed it seems to have been - which will exert a downward influence on the capital stock (recent evidence suggests that the government has become aware of such dangers and further that profit margins are not as low as they were at one time).

Thus, even if profit rates return to their former level once controls are removed (which may take time since upward movements of profit rates may be countered by upward movements in wage rates) the capital stock will be lower than it would otherwise have been. Furthermore, the expectation that profits will come under control in the future may act to further discourage investment even when controls are not in operation. In theory of course, many of these problems could be avoided by the use of margin controls but given the recent experiences of the U.K., it may well be that political considerations militate against the use of these and towards the use of conventional price controls.

These are just a sample of the measures unions may demand in return for control over wages; one of the inferences which can be drawn from this is well expressed by Lipsey in the following passage:

> The paradoxical result is that, whenever they persist for very long, wage-price controls that were first instituted to control the power of unions end up by giving unions a degree of power they could never otherwise have hoped to attain - and might never even have aspired to.

Certainly the ability of unions to influence economic and social policy is something which should cause concern. In the first place, the policies which they support are often based on misconceived rationalizations (as regards rent controls for example) and furthermore, may in some cases seriously attenuate democratic forces. Secondly, even if one supports up to date the policies they have been instrumental

in getting put on the statute book, there is no reason to believe one will continue to do so in the future. Finally, the very fact that unions have such a role in the decision making process should of itself be cause for concern, for it seems to throw the whole process of democracy into second place.

These are not the only long term effects controls can cause. They serve, however, to indicate that the damage controls may cause need not, necessarily, be a short term phenomena and in my view, provide the most convincing arguments with which to attack the use of controls. Indeed, even if the beneficial effects of controls could be shown to be more than just transitory there would still seem to be a very strong, and in my opinion overwhelming, case against the use of controls. This is the essential conclusion of this chapter, a conclusion which will be, for the most part, supported by the analysis of the final chapter of this thesis.

Footnotes to Chapter III

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3. W. Poole, "Thoughts on the Wage-Price Freeze," Brookings Papers on Economic Activity, 1972.

4. J. Carr, Wage and Price Controls: Panacea for Inflation or Description for Disaster?," in M. Walker op. cit., pp. 5-58.

5. R. Barro and H. Grossman, "Suppressed Inflation and the Supply Multiplier," Review of Economic Studies, 1974, Vol. 41, pp. 87-104.

6. J. S. Flemming, Inflation, Oxford University Press, 1976.

7. The foregoing is not intended as an attack on egalitarian measures per se, rather it is a criticism of a particular form of egalitarian measure which has become quite important in Britain. The point here is that if there is a desire to reduce income disparities a preferable method of achieving such reductions is through the tax system.

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CHAPTER IV

WAGES AND PRICE CONTROLS: THE ECONOMETRIC EVIDENCE FOR BRITAIN

4.1 Introduction

The previous two chapters have attempted to outline the possible gains and costs associated with the imposition of wage and price controls. This chapter will look at a number of attempts to quantify the gains, and, in order to do so, will illuminate on a number of the econometric problems involved. It will be seen that assessments have, on the whole, found such policies to be largely ineffective, and, when it is realized that the costs involved (these were outlined in some detail in the previous chapter) may not be inconsiderable, this might lead one to be somewhat less than sanguine about the imposition of wage and price controls. Such a conclusion, however, is not entirely justified from an examination of the econometric evidence alone, for much of this is severely flawed in a variety of ways. Furthermore, the relative failure in previous periods may be due to a lack of understanding of how wage and price controls work - this may change in the future. Put simply, econometric evidence can shed some light on the past record, it does not necessarily constitute a final verdict of the merits, or otherwise, of controls.

This chapter will have the following format; initially there will be a discussion of the general form of the wage equation and then various arguments of that equation will be examined in more detail. Following this, methods of representation of the effects of controls will be examined and it will be suggested that the rotation hypothesis (described in Chapter 2) is probably the most satisfactory. Thereafter, there will be a brief discussion of the price equation and an assessment of a number of econometric models which deal with the British case. Finally, there will be a brief summary.

4.2 The Role of the Wage Equation

Any attempt to quantify the effects of controls necessarily involves counterfactual predictions; for this reason it is important to have a model which is capable of making such predictions. The most usual choice is one which consists of a wage equation of the augmented Phillips curve type and a price equation (many studies contain just a wage equation - the possible significance of this will be explained later) based on normal cost pricing. There is, however, an alternative to this model, an alternative which has been suggested with some vehemence by authors such as Oi[1] and Darby[2]. These authors suggest, that since monetary (and possibly fiscal) variables are the fundamental driving force behind the inflationary process, it is these which should be considered in as assessment of the effects of

controls. It will be argued below that the case is not as clear cut as these authors suggest and it may well be that the conventional model is preferable despite its associated problems. In part the reason is, that although the link between the money supply and inflation may be quite close in the long run, in the short run the relation is a poor one and probably inferior to that provided by a combination of the augmented Phillips curve and a price equation. In part also the Phillips curve can be seen as a structural equation in a larger model, a notion which has been developed more thoroughly by Gordon[3] and Lipsey[4]. If this is the case and if that curve is stable (or structural changes can be identified), a monetary model is unnecessary to represent the effects of controls.

4.3 The Determinants of the Wage Equation

Given that the "traditional" model is adequate for the purpose in hand, I shall now discuss what I consider to be the most important component of that model - the wage equation. The simplest formulation of this equation relates, for reasons discussed in Chapter 1, percentage changes in wage rates to an excess demand variable (usually unemployment) and inflationary expectations. The ground will not be reiterated here, however some of the econometric problems associated with each of the variables will be outlined since these are often ignored in econometric assessments.

As regards the dependent variable, a common formulation is the proportional change in the wage index over the corresponding quarter of the previous year, i.e., $(w_t - w_{t-4})/w_{t-4}$. However, as a number of authors have emphasized, this is the correct formulation only if certain rather restrictive assumptions are fulfilled. The assumptions which must be fulfilled are the following (these are stated by Rowley and Wilton[5]):

1. "Wages are set annually for all workers and, once established, remain fixed until the next annual negotiation and settelment..."
2. "The labour force is divided into four distinct groups on the basis of the quarter in which their annual wage negotiations and settlement take place."
3. "The ratios of all seasonal groups in the labour force to the total labour force are constant..."
4. "The percentage change in wages for each of the four seasonal groups is a linear function of the same set of explanatory variables with the same parameter values for each group..."
5. "The relative change in the aggregate wage rate is appropriately approximated by a moving average for the relative changes in the wage rates of the four groups."

For the most part authors have, either explicitly or implicitly assumed these conditions are fulfilled and have proceeded to use the Overlapping Annual Wage Change method with

Ordinary Least Squares estimation techniques. However, as Rowley and Wilton[6] have pointed out, this procedure will lead to autocorrelation and in many cases t-statistics will be artificially inflated. Using Generalized Least Squares they find that many variables, which appeared to be highly significant under O.L.S., become insignificant, including the excess demand variable. The implications here are of course obvious, for it would seem that manipulating demand may be a futile (and therefore incorrect) policy if wage settlements do not respond (demand can, of course, affect prices through other channels). Indeed, Rowley and Wilton go so far as to suggest that Canadian economic policy may have been based on totally incorrect premises.

A number have challenged the Rowley and Wilton conclusions and for a variety of reasons. These are listed below:

(a) Since the Rowley and Wilton estimates find not only the demand variable but in many cases all variables to be insignificant, the results seem implausible to say the least. In particular, it would seem from the most casual empiricism, workers do, in some way, take into account past inflation rates in their wage bargains.

(b) Quarterly wage change models (which are, however, based on the same assumptions as the OAWC models), often - though not always - find the excess demand

variable to be significant. In this connection see Reid's assessment of incomes policy in Canada.[7]

(c) Most importantly, estimates based on the individual contract data, which avoid the problem of auto-correlation and do not violate the earlier assumptions, have found the excess demand variable to be significant. Although GLS estimators should be deemed superior to those of O.L.S. they must be considered inferior to the disaggregated contract data. Examples of studies which have used contract data are those of Riddell,[8] Sparks and Wilton[9] and Hammermesh[10] (the first two are Canadian studies, the last named American).

From all this it would seem the conventional formulation is incorrect but that G.L.S. estimation also provides problems. The preferred method would seem to be to use contract data (especially as this allows the use of a "catch up" variable - a variable which shows the response of individual contracts to unanticipated inflation) and the fact that it has not been applied in the British case casts some doubt on the assessments of controls which have hitherto been made.

So far it has been assumed that the assumptions listed earlier are upheld. In practise it seems that these are unrealistic and furthermore when realistic assumptions are introduced conclusions can be significantly affected. Rowley and Wilton[11] found that when variable weights are

used with G.L.S. estimation techniques most variables became insignificant (more recently they have provided a set of 33 possible Phillips curve relationships each using a slightly different specification - most, though not all, find unemployment to be insignificant at the 10 % level[12]) and similar results are found by Ashenfelter and Pencavel[13] using the Q.W.C. specification. A variable weights scheme has, however, not been applied to British estimates on controls; this may be a further reason to treat such estimates with caution.

A final point should be made concerning the dependent variable and this is that the results may still depend critically on the way the percentage change in wages is measured. For example, there is the question of whether one should consider weekly wage rates or hourly wage rates, or indeed whether it is earnings which should be considered. Judging by the different formulations which appear in the literature (see for example the views of Gordon[14] and Oi[15]) the issue has not been settled yet and will not be dealt with further here. This, however, is not to deny its importance, for example, Godley[16] has pointed out, that in the period 1956-1971, which was that chosen in the Parkin, Sumner and Ward[17] paper, basic weekly wage rates changed 115 % whereas weekly earnings changed by 169 %.

The foregoing has given a taste of the problems associated with the dependent variable, yet there are also

quite major problems associated with the independent variables. The excess demand variable has provided a number of difficulties for the econometrician, some of which will be instanced more fully later. One difficulty is related to the choice of that variable. Generally, the unemployment rate is the most common choice, however, this is only the correct variable if there exists a stable relationship between it and the vacancy rate (this matter was discussed in the first Chapter). In particular, over the course of the cycle the relationship may not be stable (explaining observations of counter-clockwise loops) and more important for our purposes there may occur structural changes which will lead to shifts in the unemployment-vacancy relationship. The latter have been particularly important in recent years and will be alluded to on a number of occasions in this chapter.

Most authors have realized the importance of an expectations variable in the wage equation. Even the early assessments (those of Phillips[18] and Lipsey[19]) included the past inflation rate though its implications were not fully recognized. The past inflation rate is, as later authors have not been slow to point out, the correct specification only in the case where inflationary expectations take just that rate into account. There is little reason to suppose that this is the case in the real world. Furthermore, even if the past inflation rate is appropriate, its inclusion will lead to simultaneity bias. In general most authors

have considered this to be of minor importance though Reid[20] does manage to avoid it.

As highlighted earlier, the actual method of calculating the expectation series is open to some discussion and a number have suggested reasons why the associated coefficient may be biased in a downwards direction. An alternative would be to use directly observed expectations, such a procedure has the advantage of testing just the one hypothesis as opposed to the joint test made when expectations are modelled. One instance where observed expectations are used, is in the paper by Parkin, Sumner and Ward[21] though, as I shall indicate, there are reasons to believe this may lead to incorrect conclusions.

What is apparent from the above is that there are a variety of problems in defining a wage equation for the policy-off period and furthermore, that many papers do not come to grips with these problems. Given the nature of this thesis, I have not attempted to deal fully with the points raised, rather the intention has been to highlight reasons for which previous work can be criticized and to suggest directions which future work should take. I shall emphasize a number of these points later when attention is turned to a variety of assessments on the effects of British wage and price controls.

4.4 Representation of the Effects of Controls - The Case of the Wage Equation

Even if an accurate policy-off equation can be formulated the measurement of controls can still be misleading if incorrectly attempted. Broadly speaking, three methods are used:

1. Simulations based on prediction errors of the wage equation in the on-period.
2. The use of shift dummy variables.
3. The formulation of a policy-on equation (or some similar approach) either for the whole policy-on period or for each separate period of controls.

The first two methods will be accurate only if the structure is unchanged between the policy-on and policy-off equation, otherwise (i) the estimated slope of the policy-off curve will be too shallow and (ii) the overall goodness of fit will be lower than it should be. If, however, the norm acts to restrain settlements above the norm (and has a perverse effect on settlements below the norm) there will be a structural break. In econometric terms, for the model:

$w = a + bX + e$, where w is the percentage change in the wage rate, X is a set of explanatory variables, and e is an error term and a and b are parameters; the dummy variable method is correct if the a parameter is the only term affected. If on the other hand, b varies or the values of the explanatory values are altered the dummy and simulation methods are inadequate. Simulation methods are subject to the

further criticism that they provide no test of statistical significance.

An alternative method of assessment, as suggested in the second Chapter, is to consider the possibility that the wage curve may be rotated in an anti-clockwise direction during periods of incomes policy - with the pivot point at or about the wage norm. Such a suggestion emanated from an article by Lipsey and Parkin[22] where a separate equation was fitted for the policy-on period. While in many ways preferable to the previous methods, there are reasons to believe that this procedure is also inadequate. In particular, it is assumed that:

(a) in each period of controls the norm was set at the same rate;

(b) that all periods of controls were enforced with equal severity - a highly unrealistic assumption.

To capture more accurately the effects of controls, a model must be able to allow for the differences between different periods of controls for it seems that there may be more diversity between different periods of controls than between some periods of controls and those of no controls. Interestingly, Parkin, one of the authors of a later study, has apparently turned his back on the rotation hypothesis for just this reason.

The point of view taken here, however, is somewhat different from that of Parkin and is in line with that advanced

by Reid.[23] Although the original formulation of the rotation hypothesis was inadequate it is possible to refine that formulation so as to allow it to make good predictions about the effects of controls. To do so it is necessary to recognize the diversity of effects between periods (and even sub-periods) of controls and then to outline a method which can allow for this diversity. Such a method will be discussed later in this chapter.

4.5 The Price Equation

The price equation will be examined in less detail than the wage equation primarily because I feel it is less important to an understanding of the effects of controls. That this seems to be a common opinion is reflected by the relative paucity of empirical assessments of price controls compared with those of wage controls. This should not, however, be understood to imply that the price equation can be ignored; there are a number of reasons why it is of some value. Most important are (a) it is often suggested that controls lead to a reduction, or a slower growth, in real wages. If such does occur one (and that this leads to a post-controls wage bulge) would expect the policy-off price equation to be subject to positive prediction errors (b) if prices are influenced by the level of demand, it is possible for a rotation to take place of the price equation - analogous to that of the wage equation. One might add that since most price equations have been based on normal cost pricing they cannot

show such a rotation, (c) it is possible - particularly for a government of the left - to put the burden of controls on prices and leave wages to be determined largely by collective bargaining. In such a case, wages may or may not respond and the inclusion of a price equation would be of interest in this regard. It may indicate why the controls (if unsuccessful) failed.

In the literature, the main method of assessment has been by dummy variable methods, however, the use of dummy variables is even more implausible here than for the wage equation. Essentially, for dummy variables to be significant profit margins must fall progressively through the period of controls and remain at their depressed level during control-off periods. Various attempts have been made to devise more satisfactory methods and these will be looked at below. One method, again used by Lipsey and Parkin[24], is to devise separate policy-off and policy-on price equations; these they find to be significantly different. Another method, used by Godley, Coutts and Nordhaus[25], argues that price controls will divert prices from their desired level by some fraction of that level minus the guidelines, this being dependent on the severity with which the policy is formulated and enforced. Further, they assume that the diversion between the desired and actual price increase will approach asymptotically a limit and that when the policy is removed profit margins will return, ceteris paribus,

to their original level. Given this last assumption it is clear price controls cannot of themselves affect inflation except transitorily, and while the model may be of value when accompanied by a wage equation it does, in large part, assume conclusions which should be proved - plausible though these might be.

Before concluding this section, I wish to draw attention to two reasons why such an equation may give an over favourable estimate of the effect of controls. Firstly, an equation is accurate only if there are no quality deteriorations or other unmeasured distortions, yet there may be reasons for these to occur (these were suggested in Chapter 3). If they do, there will be a divergence between the measured price index and the "real" price index the latter being higher than the former; therefore, assessments of controls will overstate the long run impact on the price level (such an argument is also applicable to wage controls).

A second point is that the price equation may be based only on manufactured good prices (similarly the wage equation may deal only with a sub-section of the labour force) or a similar categorization. It could be the case that excess demand will seep over into uncontrolled sectors with the result that the price of non-estimated substitutes will rise more than would have been the case had controls not been imposed (the opposite is the case with complements though substitution effects are usually more important). Thus, the effects of controls will again be overstated

4.6 A Discussion of Some Econometric Estimates of the Effects of Controls in Britain

The following will look at a number of attempts to quantify the effects of controls in Britain. Though the list is by no means complete it contains many of the most important estimates and should give the reader an idea of the conclusions reached. The first assessment is that of Smith[26].

Smith's paper was part of a Brookings collection on the British economy. The paper entitled "Incomes Policy" assesses the past record and also discusses aims and ideals of controls in the British context. As one of the earlier papers in this area the periods chosen as controls-on periods have in large part set the scene for later work (including the estimates of Lipsey and Parkin and Reid which will be considered later) and for this reason will be outlined here:

Period 1 1948:1 - 1950:3
Period 2 1956:1 - 1956:4
Period 3 1961:3 - 1962:2
Period 4 1962:3 - 1964:3
Period 5 1965:1 - 1966:2
Period 6 1966:3 - 1967:4

It is obvious that in some periods controls were operated far more strictly than in others (for example, it is in some doubt whether the 1956 period or the 1962-1964 period

should be considered ones of controls), though because Smith uses a separate dummy for each period, this is not too severe a problem.

The wage and price equations are the following:

$$w(t) = a + bu^{-1}(t) + c\dot{P}_r(t) + e\dot{P}_r(t-1) + \sum_{1}^{6} f_i I_i + V_1(t)$$

$$\dot{P}_r(t) = g + hw(t) + j\dot{P}_m(t) + h\dot{Q}(t) + \sum_{i=1}^{6} M_i I_i + V_2(t)$$

where w is the rate of change of wages, u is the unemployment rate, $\dot{P}_r$ is the rate of change of retail prices, I is a dummy variable, $\dot{P}_m$ is the rage of change of manufactured goods prices, $\dot{Q}$ is the rate of productivity growth (labour productivity), V_1 and V_2 are error terms and all the other symbols are the associated parameters.

Many of the criticisms outlined previously can be raised against the above equations. For example, the wage equation is probably mis-specified since the present and previous rate of price change are entered and not price expectations. Furthermore, there are almost certainly auto-correlation problems, resulting from the four quarterly moving average methods (Smith also conducted some tests with a quarterly overlapping definition). Finally, the whole dummy variable method is open to serious criticism for reasons which have been explained.

In spite of these weaknesses, the conclusions are of some value for in many respects they are similar to those

reached by Reid who uses a more refined technique to represent controls. It is found that wage and price controls were most successful in the 1948-1950 period when the growth in weekly wages (Smith also conducts tests with hourly wages and earnings) were reduced by over two percentage points. In the 1966-67 period there was a lowering of weekly wages (some other series showed larger quantitative effects) by about 1 1/2 % and in other periods the effects were insignificant or even perverse (for example, during the 5th period). In general, then the conclusion is of, at best, a fairly limited influence of prices and incomes policy, an influence which may be even smaller if the pre and post-controls bulges are adequately accounted for.

Lipsey and Parkin

The Lipsey and Parkin model is one which has aroused considerable interest and, in fact, serves as the central article in the Parkin and Sumner book on Incomes Policy.[27] The model is again based on two equations such that:

$$\dot{P}(t)_m = a + bw(t)_{-r} + c\dot{m}(t) + d\dot{Q}(t)_{-s} + V_1$$

$$\dot{w}(t) = e + fu(t) + g\dot{P}(t) + h\dot{N}(t) + V_2$$

where $\dot{N}$ is the percentage change in trade union membership, $\dot{m}$ % change in money supply, and all other characters are as defined previously.

They find that there is a structural break between the policy-on and off periods and thus re-estimate equations for the policy-on period. From these they conclude that at their most effective controls reduced wage changes by about 3 % (this occurred in both 1949 and 1966) and at other times actually raised them above the predicted level by as much as 4 %. These are startling conclusions and may have influenced the Conservative government in 1970 in its decision not to impose a formal policy. The model is, however, subject to many flaws, some of which will be outlined below:

(a) the dependent variable in the wage equation defined as $(w_t - w_{t-4})/w_{t-4}$ leads to fourth order autocorrelation.

(b) The unemployment rate is entered linearly, though Lipsey and Parkin find this not to be important.

(c) The wage equation does not have a price expectations variable, rather the inflation rate is entered. In a later article, Parkin[28] does bring in an expectations variable and finds the conclusions still hold.

(d) The equations are subject to simultaneity bias (on this point, see Wallis[29]).

(e) The equations have poor fits and Parkin and Lipsey state the R^2 statistic is insignificantly different from zero in the policy-on equation.

(f) Sumner[30] has shown that there is a structural break (around 1956) which throws further doubt on the conclusions.

(g) A number of articles show that with slight modifications, the conclusions are seriously altered, i.e., the equations are not robust.

(h) Perhaps most importantly the policy-on period is treated as homogeneous, which, as has been argued, is an unrealistic assumption.

For these reasons too much weight should not be placed on the conclusions Lipsey and Parkin draw. Indeed, much of the Parkin and Sumner book is concerned with criticisms and estimations of alternative models. In essence, the articles are of two types, the first dealing mainly with econometric problems, whilst those of the second make changes in specification but use similar estimation procedures. The conclusion seems to be almost unanimous, however, that there has not been a rotation of the wage (or price) equation.

By way of illustration, I will look at one paper - that by Godfrey[31]. The author uses a restricted auto-regressive instrumental variable technique designed to cope with autocorrelation, endogenous regressors and prior restrictions. With his superior technique, he finds not only no rotation but furthermore, that in the period since 1948, unemployment

is insignificant in the wage equation. This is in a sense analogous to the attempts by Rowley and Wilton to use superior estimation techniques, for both find the unemployment variable insignificant. The sceptic might be inclined on Godfrey's results, to lower his estimation of econometricians rather than incomes policies for the conclusion surely is that not only are such policies ineffective but so too are demand policies; in other words, the authorities can do little, if anything, to counteract inflation.[32]

The other papers make slight changes to the Lipsey and Parkin model, for example Burrows and Hitris[33] choose a shorter period and add in indirect taxes. The conclusions, as mentioned above, do not substantiate the rotation hypothesis. However, because the policy-on period is treated as homogeneous one should treat these estimates with caution; they certainly are not the final verdict.

Parkin, Sumner and Ward[34]

This paper is a more rigorous attempt to create a wage equation than those discussed above. The wage equation incorporates taxes and three types of price expectations - those for domestic, export and consumer prices (the first two are from CBI - Confederation of British Industry - surveys the last from Gallup polls). Furthermore, attempts are made to test the unemployment variable with alternative specifications. There is no price equation in the model.

The effects of controls are tested with dummy variables and are thus subject to the criticisms mentioned earlier. The conclusion that incomes policies have had no effect at all also seems highly spurious for, as Godley[35] points out, the freeze of 1966 kept the wage index virtually unchanged for the whole time of its operation. A possible explanation is that employers expectations (these are the only expectations which are found significant in the model) of domestic prices were affected by the announcement of the freeze. The announcement effect of controls was found insignificant by Parkin and Carlson[36] on the basis of Gallup poll evidence, however, it may be reasonable to assume that employers are more influenced by the announcement of controls than are transactors in general. If this is the case, it would seem that directly obtained expectations should be tested to see if these expectations are influenced by controls - if this is not done there must be some doubt concerning the conclusions drawn from the equations in which they are used.

The Parkin, Sumner and Ward equation found unemployment to be insignificant between 1966 and 1971 and in consequence a further attempt was made by Gray, Parkin and Sumner to determine a wage equation (I have not seen the wage equation, however, the relevant details have been reported in Sumner[37]). This model ignores the tax variables and imposes a single intercept dummy for the period between

1969 and 1974 and a further dummy in 1972 where there were large positive residuals. These dummies suggest a shift in the short run Phillips curve and attempts were made to discover the cause of the shift. In essence, focus was concentrated on deriving an equation determining the causes of unemployment (the equation estimated included an unemployment insurance term which the authors see as very important) from which an adjusted unemployment series, a series which diverges considerably from the actual series, is calculated. Using this series the wage equation was recalculated from 1952-1965 and predicted values were made thereafter. In general, these predicted values were too high[38] the negative errors (which average on one estimate at 0.76 %) are attributed to wage controls which were in operation for most of the period. Where positive errors did arise, these can be seen as post-control catch up terms; an explanation which is quite convincing since these occurred only in periods where controls were not in operation.

The Gray, Parkin, Sumner paper avoids most of the usual problems of simulation methods, for the basic equation applies only to the period 1952-1965 where there were no major control periods (controls in 1956 and 1961 probably had little if any influence on wage determination). However, the estimates attach considerable importance to an unemployment insurance benefit term (this term is necessary to explain an apparent shift in the natural unemployment rate).

Since, at least in Sumner's article, this term is not fitted directly in the wage equation certain caution should be exercised in accepting the conclusions the authors reach (other estimates which have fitted such a variable directly found it to be insignificant - see for example, Parkin[39]). Furthermore, the expectations series is of course subject to the criticism given earlier that it may be influenced by an announcement effect (it may also be subject to a wage push effect).

Reid[40]

As part of his Phd thesis the author assesses British Incomes policies between 1948 and 1973. The assessment, like that above, is made using just a wage equation. It uses Smith's classification of control periods up to 1966 and thereafter defines them as follows:

Period 7 1967:3 - 1968:1
Period 8 1968:2 - 1969:4
Period 9 1970:1 - 1970:2
Period 10 1973:1
Period 11 1973:2 - 1973:4

Reid argues that the rotation hypothesis is correct and that a policy is successful to the extent that it rotates the augmented Phillips curve. In his estimation, he uses a k coefficient which will take the value of zero if there is no rotation and unity if the curve is rotated such as to

become a horizontal line (running through the wage norm).

Reid starts with a policy-off equation (with unemployment entered linearly) $w_t = a - bu_t + w_t^e + V_1$, where w^e is the expected rate of wage inflation and the other symbols are as previously defined. He then shows that for controls-on period i the equation becomes $w_{it} = kw^* + (1 - k)a - (1 - k)bu_t + (1-k)w_t^e + V_2$, where w^* is the wage norm. If k is zero (the policy is completely ineffective) the equation is identical to the policy-off equation, if on the other hand, it is unity we get $w_{it} = w^*$. From this the author derives a model which not only can account for the rotation but also the heterogeneity of different control periods.

The conclusions are in terms of the parameter k and are as follows. For Period 10, the value of k was .7 and for Period 1, it was .6, however, for a number of other periods, it was either zero or insignificant. Interestingly enough for the most part, Reid's results are similar to those of Smith (Period 5 being the only exception for Reid finds a small beneficial effect and Smith a perverse one) perhaps indicating the results obtained from dummy methods are of some value after all.

Although Reid's seems the best method of accounting for controls, his results can be criticized on a number of grounds. In particular, (a) there is a structural break in

the wage equation in 1966 and the unemployment variable is found insignificant thereafter, (b) there is no price equation, (c) there is no assessment of a pre or post-controls wage explosion, (d) the wage equation would seem to be less thoroughly specified than that of Parkin, Sumner and Ward, (e) as Reid admits, the use of contract data would be preferable to aggregate data.

4.7 Conclusion

The foregoing has raised some of the relevant issues with regard to quantitative assessment of controls. In general the tone has been critical, though one wonders whether refinements (such as those of Godfrey) always lead to improvements. As far as the effects of controls are concerned, the conclusion would seem to be that up to date the gains have been fairly small (in % terms) though the present controls may have had quite a strong effect on the inflation rate - albeit that this is likely to be temporary. It should also be noted effects have been quite diverse, varying to a large extent on the nature of the controls. It will be interesting to see whether future assessments support the rotation hypothesis particularly as papers by Reid on Canada and the U.S. and one by Wilton et. al. on Canada do give further support to it.

Footnotes to Chapter IV

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32. Since the rotation hypothesis suggests the wage-unemployment relationship is rotated it is inevitable that when this relationship is a horizontal straight line there will be no rotation. Perhaps in this case, Godgrey should have tried conventional dummy methods. Were these to be found significant, the policy makers situation is not quite as dire as these remarks suggest.

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CHAPTER V

THE BRITISH EXPERIENCE WITH WAGE AND PRICE CONTROLS

The first three chapters concentrated, in large part, on the theory of inflation and that of wage and price controls. This chapter will examine the British experience, particularly since 1967, to see to what degree the evidence substantiates the theory. Given the enormity of such a task, emphasis will be placed on what this author considers to be a few key areas (in particular demand policy and the relationship between the unions and the government in periods of controls), although there will be some discussion of most of the related issues.

It is worth outlining at this stage the form which this chapter will take. Initially I will present a number of tables which show some of the main trends in the United Kingdom since 1950.[1] Then there will be a discussion of inflation which it is hoped will lay the background for the subsequent discussion of controls. Finally, by way of conclusion, I wish to highlight a number of common elements of the various periods of controls; many of these were suggested in previous chapters.

TABLE 1

British Economic Indicators, 1950-75

Year	% Change in Retail Price Index	% Change in Hourly Wage Rates	% Change in Money Supply (M_3)	Unem-ployment	Inflationary Expectations	Sterling Depreciation
1950	3.2	1.9	-	1.4	-	0
1951	9.2	9.1	-	1.1	-	0
1952	9.1	8.7	2.8	1.6	-	0
1953	3.0	4.6	3.1	1.4	-	0
1954	2.0	4.2	3.0	1.1	-	0
1955	4.4	6.6	-2.8	0.9	-	0
1956	4.9	7.7	1.0	1.1	-	0
1957	3.7	5.1	2.6	1.4	-	0
1958	3.1	3.3	2.9	2.3	-	0
1959	0.5	2.6	6.3	2.1	-	0
1960	1.1	5.2	1.8	1.6	-	0
1961	3.4	6.0	2.6	1.7	-	0
1962	4.3	3.3	2.7	2.5	-	0
1963	1.9	3.0	6.5	2.3	-	0
1964	3.2	5.1	5.2	1.7	-	0
1965	4.8	6.1	7.8	1.3	-	0
1966	3.9	6.4	3.4	1.7	4.2	0
1967	2.5	4.3	10.0	2.3	5.9	14
1968	4.7	7.4	7.3	2.3	6.9	0
1969	5.4	5.6	2.7	2.4	6.1	0
1970	6.4	10.1	9.5	2.5	7.5	0
1971	9.4	12.5	12.4	3.7	7.4	0
1972	7.1	13.8	25.8 (23.9)	3.4	5.9	5
1973	9.2	12.9	28.7 (26.3)	2.2	6.9	10
1974	16.0	17.2	12.7	2.7	n.a.	4
1975	24.2	29.9	7.8	5.0	n.a.	10

TABLE 2

British Economic Indicators, 1975-76

Year	Market Prices	Weekly Wage Rates	Money Supply Growth (M_3)
1975	28.0	29.5	8.8
1976	15.2	19.3	8.5

Most recent indications point to an inflation rate of about 8.0% in 1978, for example. The October index gave an annual rise of 7.8%.

TABLE 3

Inflation Rates - An International Comparison, 1955-74

	1955-70	1970-73	1974
France	4.6	6.2	13.7
Germany	2.4	5.9	7.0
Italy	3.2	7.1	19.1
Japan	4.5	7.6	22.7
Netherlands	3.7	7.8	9.7
Switzerland	2.6	7.3	9.8
U.K.	3.6	8.5	16.2
U.S.	2.5	4.6	11.0

5.1 British Inflation

The following will attempt to give an explanation of inflation in Britain, with emphasis on the years since 1967. It is hoped that this will provide a base on which to build the following discussion of controls, for, as has frequently been emphasized, an understanding of the causes of inflation is essential to an understanding of the role prices and incomes policies can play. In general it will be argued that inflation can best be explained in monetarist terms (although other factors are also considered important), certainly in the respect that demand policy is a vital determinant of inflation. In this sense my views differ from those most common in assessments of controls in Britain (see for example the books by Jones,[2] Mitchell,[3] and Balfour[4]) although Jones seems, somewhat paradoxically, to believe both that demand restraint is impotent (and may even give rise to perverse effects) and that governments cause inflation by creating pre-election booms. Returning to the issue at hand, the reader will note relatively little is said about why particular policies were pursued when they were, and indeed this is deliberate. It is my opinion that an understanding of the motivation behind demand policies is fundamental to an understanding of the role ascribed to controls; for this reason the relevant background information will be discussed in the section on controls.

The Period Up To 1967

This period, though viewed at the time as disappointing, appears in the light of future events to have been rather a successful one. Inflation reached its pinnacle of 9.2% in 1951 (during the Korean war period) and at one point dropped to 0.5%; in general, however, the range was between 3-5% with no obvious tendency towards acceleration. Unemployment was low throughout the period - certainly in comparison with recent years - and even in recession barely exceeded 2%, although, as Ball and Burns note, there was a slight upwards trend.[5]

Policy in these years fluctuated between a deflationary and an expansionary stance (though many economic commentators would consider that, for the most part, the level of demand was kept too high) and has commonly been referred to as "stop-go". The usual scenario was a "go" phase which proceeded until a balance of payments deficit forced the authorities to deflate demand, a policy which in turn would be reversed when unemployment had reached "too-high" a level.[6]

To come to more interesting conclusions one must now consider Britain as one country in a world of fixed exchange rates, for, during the period 1950-1967, this is precisely what she was. In this regard it is useful to look at Table 3. From this table it can be seen that the inflation rates of the major industrial countries were broadly

similar over the period, and indeed, as has previously been suggested, there are good reasons why this should be so. The U.K. inflation rate was higher than average but lower than that of France (where devaluation was an important tool) and Japan (where sectoral differences in productivity growth were considerable). At first glance it would seem that this table can (given the theory sketched in Chapter I) explain all that is necessary about the British inflation rate, however as will be shown, some further analysis is required.

Over the years 1954-1967 the world export price for manufactured goods rose at an annual rate of 1.1%, whereas that of the U.K. rose by 2.2% - this suggests a certain inconsistency with the purchasing power parity doctrine. Two reasons for this inconsistency can proffered. First, the market for manufactured goods is not perfectly competitive and second devaluation will lead to an adjustment process which will involve the home country having, for a considerable time, an inflation rate above the world level (ceteris paribus). In the British case the 1949 devaluation (which is generally viewed as excessive) may have allowed employment levels which could not otherwise have been achieved, except in the very short run. Eventually sterling became less and less undervalued with the consequence that increasing pressure was put on the pound which ultimately led to the 1967 devaluation.

A further reason why inflation rates of different countries might diverge is suggested by the Scandanavian model. Essentially, when there is a difference in sectoral productivity growth, it might be expected that wages in the sector where productivity is growing faster (usually thought to be the traded goods sector) will influence those in the other sector. This argument was stressed in an earlier chapter, however in the British context differences in sectoral productivity growth rates were relatively minor, thus the theory would seem to be less useful here than say in the Japanese case.

It is time now to draw the strands together. It has been argued that in this period British inflation was, in large part, related to world inflation and policy options were restricted by this fact, though as will be argued later, this was only in part recognized. Seen in this light, it was quite possible for Britain to have an unemployment rate below the natural rate without accelerating inflation as long as she could maintain her fixed exchange rate (which she did between 1949 and 1967). To the extent that Britain's inflation rate did diverge from the world level, this can be attributed in considerable degree to the 1949 devaluation, and, to a lesser degree, to sectoral productivity growth differences with their concomitant influence on wage determination.

1967-1972

These years were marked, in general, by both increasing inflation and increasing unemployment and would therefore seem to refute the monetarist hypothesis and many others as well. For a variety of reasons the period can be explained in monetarist (for an attempt to do so see Laidler[7]) terms, though it will be argued here that the years succeeding 1969 provide the cost push theorists with their strongest case.

Most commentators think that the 1969-70 explosion is the most difficult period of wage determination to explain, for unemployment was rising, monetary policy was tight, yet the period was marked by a surge in wages - indeed settlements in excess of 15% were reached in 1969. Various explanations can be put forward to explain these, in particular: 1) the explosion was the natural reaction to the ending of controls, 2) that its cause was the devaluation of 1967, 3) although the unemployment rate was increasing the natural rate was increasing more, so in effect demand policy was expansionary, 4) tax rates increased markedly between 1967 and 1969 and these may have influenced workers behaviour, 5) workers, perhaps frustrated by the slow growth of their real incomes, initiated cost push inflation.

The first explanation will be considered later, where it will be argued that it does have some explanatory power. The second would at first sight seem convincing and

is supported by writers of such diverse views as Jones and Laidler; closer scrutiny of the evidence does, however, raise doubts. Although there was a surge in inflationary expectations following devaluation (an indication that transactors take into account information other than past inflation rates) the evidence, for what it is worth, suggests that inflationary expectations were lower in 1969 than in 1968.[8] Furthermore, the inflation rate, according to the Godley index, was little higher in 1969 than in 1968 and according to the index used by Williamson and Wood was actually lower. This would seem to suggest that the inflationary effects of devaluation were concentrated in the immediate post-devaluation period and had receded by 1969.

The third explanation does seem to contain at least a grain of truth. Unemployment benefits were increased markedly at the end of 1965 and both economic theory and common sense would suggest this would raise the natural rate of unemployment. Although monetary policy was contractionary in 1969 it was more expansionary in the previous two years and this (given lags in the transmission process) is probably more relevant as far as 1969 is concerned (one might note, however, that fiscal policy was contractionary in 1968). In essence then although unemployment was high by contemporary standards it may have been lower than the natural rate and this is what is relevant according to the accelerationist hypothesis. It is also worth noting that the explosion was led, as Lilley and Brittan[9] put it, "by the low paid and

specifically those doing "dirty jobs" - in fact those who now received little more than the unemployed. Given the resilience of differentials, in time those at higher wage levels also became involved so the whole structure of nominal wages was moved."

The fourth and fifth explanations will be considered together. It seems very probable that the effect of higher taxes, particularly in a "stagnant economy", may have caused an element of cost push inflation. Indeed, it may be difficult to explain the large jump in wage rates entirely in other terms (in the Williamson and Wood wage rate series wage increases were 7.7% in 1969 and 13.9% in 1970, which shows an even bigger leap than in the figures quoted earlier). Bacon and Eltis[10] have argued very forcefully that the decline in profit shares was due to the increasing share of the public sector (which could only come by raising taxes) and the empirical evidence of Johnston and Timbrell[11] gives further support for such an explanation.[12]

It is interesting to note that Gordon[13] finds this to be a period of wage push inflation and furthermore that monetary policy was, in part at least, allowed to validate the wage explosion. The single empirical estimate which apparently successfully ignores such effects is the Parkin, Sumner and Gray[14] wage equation though as Williamson and Wood argue, the use of the expectations variable (defined as "U.K. firms expected change in the price of their (own)

output estimated at the start of each year") is compatible with a cost push theory of inflation because firms may have become aware that a wage explosion had commenced and adapted their expectations accordingly.

The years following the wage explosion are seen variously as one more instance of the success of demand restraint or as one more instance of its futility. Certainly annual figures give little support to the former explanation although more disaggregated estimates may be useful in this case. Brittan and Lilley argue quite strongly that wage pressure was going down and quote the following passage from McCarthy "the rate of annual increase in earnings fell from a high point of 14% in November 1970 to just under 9% in January 1972. Indeed just before the miners strike in February of that year, it was widely said that you could make a settlement with most groups then negotiating if you offered them about 8½%". They argue that even after the miners strike there was no general surge in wages, at least not until it was clear the government wished to impose an incomes policy.

Although Brittan and Lilley may overstate their case it would seem to be a strong one. Furthermore, it should be stressed again that unemployment, although by contemporary standards high (in February 1972 it reached 1 million), may have been little above the natural rate. The increase in unemployment benefits, has already been pointed

out, there may also have been a shake out of labour (see Taylor[15]) around 1970 which further increased the natural rate (as did the changing structure of the labour force - on this see Foster[16]). Finally, the wage push, which occurred around the turn of the decade, may too have put pressure on the natural rate since it now required a higher unemployment rate to keep workers from initiating cost push inflation.

1972 To The Present

The last period to be discussed is from 1972 to the present. At least for the years following 1972 there seems little difficulty in explaining inflation. The Conservative government, perhaps frightened by the unemployment figures of the time, instituted extremely expansionary policies. Fiscal policy was used to stimulate aggregate demand and monetary policy was used to offset the "crowding out" effect which would otherwise have resulted. Monetary expansion in 1972 and 1973 was extremely rapid with M_3 expanding in both years by well over 20%. In addition flexible exchange rates were introduced with the express aim of ensuring that the balance of payments did not force Britain to institute restrictive policies as it had in the past. Finally, incomes policy was introduced with the intention of offsetting inflationary effects which might otherwise have resulted. The policy was seen at the time as an extremely sensible one (this matter will be discussed more fully later) and its

later breakdown was blamed on the intransigence of the trade unions and rising import prices. In retrospect, it is easy to see the real case of failure; monetary and fiscal expansion on this scale was bound to lead to inflation. By the end of 1972 the exchange rate had fallen by 5% and fell another 10% in the following year. Bottlenecks soon occurred, resulting in demand inflation which accelerated to well over 20% in 1975. Unemployment fell to a level which was thought relatively high, though reasons have already been put forward to suggest it may well have been considerably below the natural rate.

Much of the inflation was blamed, at the time, on rising import prices (see for example Allen[17]). The view taken here is that import prices were far less to blame than is commonly supposed. In the first place, other countries suffered similar rises but experienced far less inflation than did Britain. More technically, in the long run at least, one would expect rising import prices to be countered (ceteris paribus), by prices rising somewhat less quickly in other sectors of the economy so the overall effect will be an unchanged inflation rate (over the short run of course there will be a higher rate of inflation). It should also be noted that the reason why import prices rose so quickly in the British case was, in part, related to devaluation which in turn was caused by excessive monetary expansion. In this case rising import prices may increase the inflation rate but they are only the indirect cause of that increase.

Miller[18] argues that the increase in the price of oil fueled inflationary expectations, (in earlier years there were also dramatic rises in the prices of other primary commodities, e.g. copper), and this may have led to an increase, albeit temporary, in the natural rate of unemployment. In this respect there are two reasons why Britain was different from countries such as Germany and the U.S. where Gordon[19] found such effects to be unimportant. In the first place, in Britain it seemed that the government was prepared to maintain a high level of employment irrespective of its inflationary consequences. This was not the case in many other countries. In the second place, the Conservative government had instituted an indexation scheme in 1973 which was designed to come into effect if the CPI rose more than 7% above the level in October of that year. The government hoped (on this point see Miller) that the scheme would never have to come into effect, but because of the oil crisis these hopes were dashed and in all eleven "thresholds" were triggered. This may have been a major factor in leading to unprecedented rates of inflation.

From 1972 onwards the inflation rate soared in Britain, reaching a pinnacle in 1975. Monetary policy became much tighter in 1974 and 1975 though the evidence that wage claims were moderating over this period is tenuous to say the least. Even such staunch monetarists as Brittan and Lilley show caution in their statements on this period; for example they state "The most anyone can say is that wage

increases looked as if they might have levelled off in the second half of 1975 and then perhaps declined if there had been no £6 limit." What would have happened if the controls had not been instituted is not clear though one could argue that the wage claims in the relevant period reflected, in no small degree, a pre-controls wage explosion and, in part, as argued above, a response to the oil price hike.

Since the pinnacle of 1975 the inflation rate in Britain has, until recently, declined markedly with a rate of about 8% being experienced in 1978. Monetary policy has been restrictive with M_3 growing (according to the OECD) at 8.8% in 1975 and 8.5% in 1976. This has been accompanied by large cuts in public expenditure which have, at least partly, been enacted in accordance with the dictates of the IMF. In 1975 and 1976 the exchange rate fell quite markedly (in relation to the world level) and this explains why the inflation rate seemed to be on a plateau, despite much smaller increases. Many have expressed surprise at the fact that the exchange rate maintained such a high value until the 1975-1976 period though Laidler argues that this was, in large measure, caused by the financing of the large public sector debt and by the inflows resulting from the hike in oil prices. Thereafter the exchange rate has been much stronger and at least against the dollar has bounced back considerably, though, given the current environment, this may not last.

This period then is one of unprecedented inflation and unemployment rates. The former can be explained well in terms of the monetarist hypothesis (it is noticeable that both Ball and Burns[20] and Williamson and Wood[21] support this view) while the latter is, on the one hand, due to a higher natural rate and on the other due to a reaction to the high inflation rates. What should be stressed, and may not have been sufficiently stressed so far, is the importance of a flexible exchange rate in allowing a country to determine its own inflation rate - it is clear Britain chose (perhaps through ignorance) a high inflation rate, Germany on the other hand chose a lower rate. This option was not open in earlier periods and accounts for the much wider divergence of inflation rates in recent years.

5.2 Wage and Price Controls

Having presented an explanation of Britain's inflation it is now in order to look at the role wage and price controls have had in ameliorating inflationary pressures. As a preliminary I present the following table based on that given by Brittan and Lilley:[22]

In what follows I hope to deal with British experiments with wage and price controls, particularly since the 1967 devaluation. I will attempt to give something of the background to these various periods of restraint and then will discuss the manner in which they operated. Finally,

there will be a summary of what are considered to be the most important characteristics of the use of wage and price controls in Britain.

Up until the 1964 Wilson government, there were attempts to introduce controls at three times these being in 1948, 1956 and 1961. All were in response to balance of payments crises. In only one case was the government able to get TUC agreement, this was in 1948 and the experiment will be discussed briefly below. The Attlee government, which came into office in 1945, was the first majority Labour government and as such had a very close link to the trade union movement. Trade unions in fact exercised an important role in the determination of policy one example being in the area of nationalization. The government was loath, as Dorfman[23] says, "to take actions they thought would infringe on trade union prerogatives" and for this reason did not introduce controls at an earlier juncture, though they clearly would have liked to have done so. Eventually matters seemed so pressing that the government did broach the matter with the TUC. That body, probably out of its close ties to the Labour government, yielded to the government's pleas though it did demand certain "quid pro quo" measures, notably the maintenance of subsidies, and the use of price, dividend and profit controls. In part these were agreed to and thus the first British experiment with prices and incomes policy was underway.

TABLE 4

PERIOD	NAME	GOVERNMENT	TUC CO-OP	INSTITUTIONS	WAGE NORM	ACTUAL WAGE	PRICE INCREASE	HOW ENDED
Feb. 48 - Oct. 50	Cripps - TUC	Labour	Yes	None	None	2.4%	3.1%	TUC Congress voted to abandon wage restraint
July 61 - March 62	Selwyn-Lloyd's pay purse	Conservative	No	None	Zero for new agreements	4.3%	4.6%	Breached by Electricity Council November 1961
April 62 - Oct. 64	Guiding Light	Conservative	No	National Incomes Commission	2-2 1/2% p.a. later 3 1/2%	4.3%	2.7%	Faded away
Dec. 64 - Jul. 66	Statement of Intent	Labour	Yes	NBPI	3 - 3 1/2%	7.4%	4.2%	Seamens Strike
Jul. 66 - Dec. 66	Freeze	Labour	Acquiescense	NBPI	Zero	0.1%	3.5%	
Jan. 67 - June 67	Severe Restraint	Labour	Acquiescense	NBPI	'Severe Restraint'	4.0%	2.7%	
Jul. 67 - Apr. 68	Relaxation	Labour	Acquiescense	NBPI	'Continued Restraint'	8.6%	4.9%	
Apr. 68 - June 70	Jenkins renewed restraint	Labour	Acquiescense	NBPI	3 1/2% + prod. agreements then 3 1/2-4 1/2% end 1969	7.1%	5.4%	Dirty jobs explosion
Nov. 72 - Jan. 73	Stage I Freeze	Conservative	Hostile compliance	NBPI	Zero	1.1%	7.3%	
Feb. 73 - Oct. 73	Stage II	Conservative	Hostile compliance	Pay Board Price Commission	£ 1 per week + 4%	14.1%	11.0%	
Nov. 73 - Feb. 74	Stage III	Conservative	Hostile Compliance	Pay Board Price Commission	7% plus "thresholds"	12.8%	18.9%	Miners Strike
Mar. 74 - July 75	Social Contract	Labour	Voluntary	Wages to move in line with cost of living		32.0%	24.6%	Sterling crisis leads to compulsory policy
Aug. 75 - July 76	£ 6	Labour	Yes	None	£ 6	17.5%	12.9%	
Aug. 76 - July 77	4 1/2 %	Labour	Yes	None	£ 2.50 £ 4			
Aug. 77 - Jul. 78		Labour	Voluntary	None	12-month rule & 10% norm			Has been subject to repeated breaches
Aug. 78	5 %	Labour	No	None	5 %	Oil tanker drivers 15%		Has been subject to repeated breaches and now in danger of becoming irrelevant.

The policy remained in operation until 1950 and is usually seen as one of the most successful British experiments (see the previous chapter) although it is notable that it failed in one of its express aims - that of staving off devaluation. Because of its unpopularity with the TUC the policy was eventually abandoned following an unfavourable vote at the TUC congress.

The subsequent two attempts to institute controls were under Conservative governments and it is largely for this reason that they were almost totally unsuccessful. The TUC had no close ties with the Conservatives and therefore felt unequivocably able to give a negative response to requests which it felt were against its own interests. At the time it felt less able to do so to a Labour government; this does not seem to be entirely the case now.

Both the 1956 and 1961 controls were seen as a method of coping with balance of payments problems. It was argued earlier that controls could only be successful in this role if accompanied by demand restraint, this, however, was not the view taken at the time. Rather the feeling was (and in some quarters still is) that controls by themselves would forestall the inflationary pressures which lead to the balance of payments problems Britain has suffered from since the war. On this view, if the trade unions would only submit to a measure of restraint the British economy would be well set for the high growth rates which had so far alluded her.

Nowadays the argument appears rather tarnished, nevertheless it is one which has governed much of English economic thinking and it is particularly important in understanding the background to the Heath government controls.

The government was unable to implement controls in any meaningful way in either 1956 or 1961 and thus resorted to traditional policies of demand restraint; this provides an indication that trade unions were prepared to allow higher unemployment rather than submit to restriction on collective bargaining. In 1962 the National Incomes Commission was brought into being, however this, according to Ullman and Flanagan,[24] had little effect because its purpose was solely to review and report on wage proposals referred to it by both parties (the TUC was of course unlikely to make use of it). Overall then Conservative governments had little success in implementing controls during their 13 year rule.

The Labour government of 1964-70 was more successful in gaining the cooperation of the trade union movement, though it too had problems with that body (for example in its attempts to introduce "In Place of Strife"). In all it instituted five different policies, which, it will be argued, had markedly different influences on wage determination. It is noticeable however, that the attitude towards incomes policy was very much more hostile when the Labour government left office than when it took power. As Mitchell[25] puts it:

> When the Prices and Incomes Board was created, prices and incomes policy was a term to conjure

> up a benevolent glow, a hope of a better way of settling pay and prices. By the time its destruction had been arranged, prices and incomes policy had become, it seemed, a vain hope, if not a term to conjure up a sneer.

The first phase of controls, according to the Table, started in December 1964, in fact a more accurate date would be May 1965 when the National Board for Prices and Incomes was established. Indeed, Jones[26] argues that there may well have been a pre-controls bulge as agreements were hurried through in anticipation of the imposition of controls. The period was associated with expansionary demand policies which the Labour government hoped could be maintained with the use of incomes policy - as experience showed, their hopes were in vain.

The first phase of controls continued until July 1966, when, in response to a currency crisis, stiffer measures were seen as necessary and a freeze was imposed. This freeze marked a watershed in two senses - the first is that it was a compulsory policy (as indeed were all the succeeding phases), the second is that it also marked the beginning of deflationary demand policies which came in the form of tough fiscal measures. Thus, the Labour government's strategy of using incomes policy as part of a going for growth package was deemed to have failed and the economy now moved towards the "stop" phase of the "stop-go" cycle.

The freeze was successful insofar as it held down wages and prices; in the six months to December 1966 wages rose by only 0.1%, though prices rose somewhat more (since producers were allowed to pass on the indirect tax effects of the tighter fiscal measures). In the second period of the freeze wages and prices rose rather more although by far less than in succeeding periods. It is interesting to note that the freeze was successful in another sense; it was popular, at least compared to the later phases of controls, a fact which is somewhat surprising given that it was a tougher form of policy.

The two phases of the freeze were followed by a period of "moderation" which made allowance for more liberal exemptions. Nevertheless the "norm" for wage increases remained at zero. In practise the period does not appear to have been a successful one for wage increases rose by nearly 9%, though prices rose by rather less.

The final period can be called a post devaluation phase in which the "norm", or, as it now became known, the "ceiling" was raised to 3½%, with exemptions due to productivity agreements. The period was ushered in by restrictive fiscal measures (which Jones argued had inflationary effects on prices) although, as has been argued previously, monetary policy in 1967 and 1968 was quite expansionary. This period of controls again appears unsuccessful and it is apparent

that the government had come to the conclusion that controls were unacceptable to its followers by 1969.

Before discussing the reasons why controls became increasingly unpopular, and in consequence increasingly unsuccessful, it is worth looking at what will be called exceptional categories. These according to Jones were four in number and are:

(a) "Where employees by accepting more exacting work... made a direct contribution towards increasing productivity."

(b) Where a change in the distribution of manpower was deemed necessary.

(c) Where a certain group had a salary level thought to be too low.

(d) Where certain groups had fallen out of line with the comparative groups in similar work.

In practise the first and the fourth were the most commonly used while the second and third were used only in rare cases. As regards the first criterion arguments given in previous chapters would suggest it is a mistaken criteria. In particular, the Scandanavian model suggests that workers in low productivity growth sectors will tend to emulate their brethren in high productivity growth sectors and indeed there is considerable evidence that the earnings structure in Britain has been fairly stable. Furthermore, it is difficult to determine what a direct contribution to productivity is, especially as workers, in anticipation of

productivity clauses, may hold on to outdated methods until the clauses come into effect. Many have argued the use of productivity was the key factor leading to the breakdown of controls, though it is my feeling there are other important factors to be considered as well.

The second and third categories of exemptions may lead to similar problems and indeed Jones cites instances of both types (the Midland Bank settlement of 1965 for the former, that of the agricultural workers for the latter) where it became evident that other workers had acted to reattain their relative positions. In some circumstances it would seem necessary to have exemptions of the second type (for example when there are large changes in relative costs - the oil price hike being an obvious case here) although it may be the case that it is even more difficult to change relative positions when the government is involved in the wage determination process than in normal circumstances. The reason why this might be so is that workers become more conscious of relative changes when instituted by government decree than by impersonal market processes.

The last exemption category holds similar problems and is rather akin to the first category. The problems were at their most acute following the freeze when the government decided to allow agreements (made prior to the freeze) which promised payments later in the year. The Prices and Incomes Board tried not to allow groups in similar jobs to gain

comparative increases although, as Jones points out, this was a difficult task. On a more general note, any incomes policy will be subject to problems of this kind, for, unless all negotiations take place simultaneously (even if one considered this desirable it is doubtful whether British trade unions would agree to it) some groups are bound to reach a settlement just before a policy is imposed others just afterwards. It is not clear what the solution to this problem is if indeed there is a solution.

The foregoing has constituted a rather negative assessment of exemption categories allowed between 1965 and 1970 (exemptions of course were far more frequent under the later stages than during the freeze) and perhaps suggests that desirable though these categories may be, none are practicable. Whether any policy can avoid problems of this kind is an open question, unless one feels a Tax Based Incomes Policy can be successful (even this would not bypass all the problems).

Reasons for the Breakdown of Controls

Many reasons can be put forward to explain the increasing unworkability of controls and it to these the analysis now turns. In the first place, as has been argued previously, controls are probably incompatible, in the long run, with expansionary fiscal and monetary policies. However, while such considerations may be relevant to the

earliest period (up to July 1966) thereafter, except possibly in 1969, they are less relevant. Certainly in this case there seem to be factors other than inappropriate demand policies involved.

One such factor might be that of devaluation; Jones for example lays considerable stress on this. Certainly devaluation may feed through into wages and if demand policy is validative may generate accelerating inflation. In the case of Britain it seems (as has already been suggested) that devaluation had a strong initial effect which somewhat dampened later (at least with regard to inflationary expectations). It is possible that this, by making the norm appear unrealistic, was an important factor, though it is reasonable to suppose it was just one factor among many.

Another factor is that of fairness. Several sources have argued that the public sector was more affected by controls than was the private sector. Godley, for example, shows the six year increase in weekly earnings in Manufacturing industry from 1963-1969 to have been 49.3% and that in the public sector 41.2%. That earnings in the public sector increased relatively in the ensuing years would tend to support the hypothesis that certain groups felt unfairly treated. No doubt the case of the public sector is not the only relevant one here.

On a more general level, it is apparent that in many periods of controls governments have attempted to influence the public sector more strongly than the private sector on the rationale that the private sector will follow suit. There seems to be little evidence that such hopes are justified and perhaps such a policy should not be attempted in the future tempting though it might be.

As has been mentioned previously, tax rates rose quite sharply during the Labour government's period of office, particularly for manual workers. In fact, as Jones points out, "between 1964 and 1968 the annual rate of increase in the real take-home pay... of manual workers in the United Kingdom was only 0.5%," this may constitute a further reason why controls were undermined. Furthermore, this point may help explain the seemingly paradoxical fact that the freeze was more popular than the later stages of the policy. The freeze was built on the premise that a temporary holding back would lead to sustained economic growth, when it was found that this was not to be and that real take-home pay was barely rising the unpopularity of controls is not hard to comprehend.[27]

Another point is also relevant, and this is a point which has not yet been made. It may well be that controls are quite simply viewed by trade unionists as being acceptable only as a temporary measure and only then in certain circumstances. Jones argues that this inference cannot

be drawn from the Labour government's controls and this may well be the case, however the more recent experiments would tend to support such a view. There is also some recent evidence on this point given in a study by Daniel.[28] This author finds only about 20% of plant union negotiators interviewed were prepared to accept a permanent incomes policy.

Finally, and perhaps related to the previous point, the British structure of industrial relations is such that in many cases there is bargaining at both a national and local level. This is what the Donovan Commission had in mind when it spoke of a two-tier structure of Industrial Relations. Such a structure encourages significant wage drift (thus average weekly earnings grew considerably faster than weekly wages during the 1960's) which may make it easy to avoid the effects of controls. Indeed, there may exist an incentive for workers to attempt to avoid the effects of controls even if they support their use, simply because they expect other workers also to avoid the effects of controls. The longer controls are in operation the more acute is this problem likely to become for the spirit of "national unity" which is often present when controls are first introduced is often dissipated over time.

For these reasons, the 1965-1970 experiment gradually became more and more ineffective. Indeed, the influence of controls on differentials and the likelihood that they were associated in the minds of workers with a slow

growth of real incomes may have led to a post-controls wage bulge which in turn constitutes part of the explanation for the 1969-1970 wage explosion. Although expansionary monetary may have been one of the reasons for the breakdown of controls (and this is somewhat in doubt) there were many others which suggests that either the implementation of controls was poorly executed or that the long run use of controls is incompatible with the British trade union movement (or both). This point will be returned to at a later juncture.

Controls Under the Heath Government

The next period of wage and price controls was initiated in November 1972. This followed a period of over two years where (at least officially) there were no controls. One could, however, classify as controls the (n - 1)% policy the Conservative government operated (whereby each claim in the public sector was supposed to be one per cent less than the previous one) particularly since it brought, as Brittan and Lilley point out, groups like the post office workers into conflict with the government. The policy was deemed to have failed when the miners obtained a massive 17½% increase, although again Brittan and Lilley assert there is little evidence other groups followed suit. Also in this period the CBI brought in (July 1971) a system of voluntary controls which, according to Parkin and Carlson,[29] is the only time controls have had any announcement affect (and this a statistically insignificant one) on expectations.

The approach which will be taken in discussing the Heath controls will be rather different to that used for the Wilson controls. In particular, the economic and political background will be emphasized more strongly and the details of the controls system will receive less attention. This approach is taken for a variety of reasons, in particular: (a) it is my belief that the breakdown of the Heath controls was due to factors different to those of previous periods, (b) this period is perhaps Britain's the most clear example of the use of controls in Britain with the aim of obtaining non-inflationary growth, (c) while there are a number of books dealing with institutional aspects of controls during the 1964-1970 period, there seems to be less information on this period; Brittan and Lilley for example tend to give an overall view rather than concentrating on details.

In 1972 began what was hoped to be a period of high growth rates in the British economy. It was becoming increasingly apparent that British growth rates and living standards were lagging behind those of the rest of Europe and it was felt that the way to make up the gap was to run the economy for as long as possible at a high level of demand. However, there was one element of the Heath government boom which was not common to those of previous periods, even though their aims were the same; this element was the use of flexible exchange rates. These, as have been emphasized, were used not to allow Britain to attain a lower inflation rate than the rest of the world, but rather to

allow her to continue her quest for growth unimpeded by balance of payments problems. Thus, commencing from the Budget in 1972, the aim of growth became the fundamental goal of the government. Both fiscal and monetary policy became very expansionary and soon afterwards the £ was allowed to float. The Heath government however, felt that another element of policy was needed in order to contain inflationary pressures; this extra element was wage and price controls. Although Heath strongly denied (and still denies) this, 1972 marked a U turn in terms of the policies pursued by the Conservative government. The emphasis on the market as the curer of all ills was forgotten and the feeling became prevelant that demand restraint was of little or no value and that government intervention, in the form of controls, was vital.

It was one thing for the government to wish to impose controls, it was another to gain union consent. Previous Conservative governments had been unsuccessful in this aim and the Heath government was no more successful. Talks with the unions began in July 1972 but eventually broke down and Heath was obliged to impose a compulsory incomes policy in November of that year. What is clear, however, is that during the interim period wage claims were noticeably higher than previously (this is pointed out both by Brittan and Lilley and the OECD report for 1973 although the latter is talking about the whole of 1972[30]). There are two views to consider here; the first seeing this as a direct influence

of the threatened imposition of controls, the second as evidence of the necessity of controls. The second view is a common one (and was stated on a number of occasions prior to the £ limit) and it is perhaps one of the main reasons why it seems so easy to convince the public of the necessity of controls. The view taken here is that the argument is almost certainly incorrect, for, unless the expectation of controls has a very strong effect on inflationary expectations, it is not surprising that workers will try to achieve settlements higher than they would otherwise have done. Since evidence of a strong announcement effect is nonexistent, a precontrols surge of wages is the most likely course of events.

The Heath government's controls contained three phases and were based on the American experiment which it was felt had been very successful, although later evidence suggests this success was largely transitory (see for example Reid's paper on the U.S. controls[31]). One element, which was not mentioned in the Table (see page 16), was that of price control. It is clear that these operated very severely on profit margins, for example in the freeze between November 1972 and February 1973, prices in the home market rose by only 1% whereas costs of basic materials and fuel purchased by manufacturers generally by 11%. In the following phase, the OECD notes that, the Price Code permitted price increases in line with allowable costs, these however, included only 50% of extra labour costs; this had further repurcussions

on profit margins. Price controls did, to some extent, hold down prices, thus the Price Commission estimated that in the 18 months up to August 1974 prices were held down by 1½%; the effects on profit margins is difficult to disentangle from other factors although many commentators feel it to have been severe.

Prior to the miners strike controls were, in general, abided by, this despite the fact that the government operating them was Conservative. Although unions were hostile their hostility may have been tempered by the knowledge that the government was going for high growth rates and also by the fact that quite stringent price controls were in operation. Whatever the reasons it is clear that there was little action taken against the controls.

The verdict of most commentators was favourable. "The Economist", in particular, saw the controls as part of a well designed package of measures instituted to help the British economy. In the November 17th edition of 1973 it talks of the great success of the Heath government and says "It is bad luck that, though a miracle has been achieved, nobody seems to notice." Further, the high rate of inflation in Britain was blamed on the rise in import prices, an argument which has already been discussed. In later editions "The Economist" attacked the idea of deflationary measures as one which would "send Keynes spinning in his grave" and gave continued support to the Heath government.

It is apparent from all this that not only were controls imposed in an economy which was using expansionary demand management but that this was a policy supported by some supposedly learned sources. It would be wrong therefore to attribute the Heath government controls to an attempt to lull the public into a false sense of security, an argument which has often been made against controls. To my mind there is no doubt that controls were used with the best of intentions and to assert otherwise is to fly in the face of facts.

One feature of these controls is that the norm became progressively more lax. This I would argue to be necessary precisely because the government's policies were so expansionary. To have attempted any other strategy would have been to court the kind of conflict which eventually did occur in the form of the miner's strike. As things turned out controls in the third phase became much more lax than was intended. This was because the terms of trade shifted unexpectedly against the U.K. and led to rises in the retail price index sufficient to trigger off a series of threshold payments.

Stage 3, despite being more liberal than Stage 2, brought about the Miners Strike, which led in turn to a constitutional crisis. This strike, which may have been avoided had the Coal Board's bargaining tactics been more subtle, (see Brittan and Lilley) was probably, in considerable

degree, due to the oil price hike, which made it clear to the miners that their bargaining position had changed. If this is indeed the case, it can be seen that a large change in relative prices may make the operation of an incomes policy very problematical, if indeed continued operation is feasible.

The strike, however, has another lesson and this is that if an incomes policy breaks down in circumstances such as these, the consequences on a country's political structure can be extremely damaging. The fact that the Conservative government, unlike the previous Labour government, was prepared to hold its ground, led eventually to an election based on the platform "Who rules the country the government or the miners?" Furthermore, this open confrontation between the government and the unions led to the growth of extreme right wing factions which aimed to smash the unions or to imprison striking workers. Movements at the opposite end of the political spectrum also grew up and gained support among certain groups. Thus controls, which were designed to bring about national unity, had the effect of causing increasing polarization and bitterness.

A brief conclusion regarding the Heath's government's experiment with controls is in order here. Controls were used against a background of expansionary policies, however few saw the dangers of this strategy. As it happened the reason for the breakdown of controls was not this factor

- although it perhaps accounts for the increasing liberalization of controls - rather it was the fact that one group, which felt it had been left behind and realized its strong bargaining position, was willing to challenge the government. The consequences are well known. As to the effectiveness of controls it seems that in the first phase (the freeze) they were, according to Reid,[32] quite effective and that in successive periods they also had some restraining effect on wages and prices. However, it also seems that much of the gains made were transitory, with thresholds greatly speeding up the catching up process. On balance then one is faced, on the one hand, with a (probably) temporary reduction in inflation rates and on the other a constitutional crisis, worsened industrial relations, and declining profit rates. It therefore seems that controls were almost certainly not beneficial.

The Labour government of 1974 attempted to introduce a voluntary Social Contract to fight inflation - few would deny the attempt was successful. In theory wages were supposed to move in line with costs, in practise real wages, from the second half of 1974, rose considerably. This rise was helped by indexation, which continued until November 1974, by government subsidization of prices and by the price code (thus the share of profits - after stock appreciation and depreciation - fell from 12.6% of national income in 1973 to 10% in 1974:3). Even when indexation was concluded (in all eleven thresholds were triggered) real wages rose,

for example by 7.2% in the first quarter of 1975. As argued earlier the government's apparent willingness to "bail out" companies may have been an important factor here, as was increasing taxation (despite the fact that the so-called "Social Wage" now became worth more than £20 a week). Whatever the reasons it can be seen that in this period Incomes policy (though not the prices policy - or rent controls for that matter) was applied far less stringently than under the Heath government.

As 1974 progressed it became increasingly obvious that the "Social Contract" was failing and the government eventually (in 1975) came round to the view that a tougher form of controls was necessary. That there was a sudden surge in wage claims before the £6 pay limit came into operation seemed to make that limit all the more necessary, though it is more likely that the high wage claims were a response to the threatened inauguration of a tougher form of controls.

Although there are, to my knowledge, no econometric studies on the effects of controls following the introduction of this and the following limits, casual inspection indicates that at least some degree of success was obtained in lowering the rate of inflation; though more recently there does seem to be a significant wage explosion.[33]

In 1975 the inflation rate was about 25% and sterling was extremely weak; in 1978 the inflation rate had declined to about 8%, the pound had stabilized and the

future looked more promising (recent events portray a less sanguine picture). It seems that this reversal must be attributed, in part (for other factors such as restrictive demand management are important), to the use of controls, however, whether these benefits, which may well be transitory, compensate for the associated costs is somewhat less clear and forms one of the main topics of the discussion below.

In an earlier chapter the views of Lipsey[34] on the effects of controls were outlined. This author suggests that either controls must be forced on the unions with the concomitant dangers of increasing confrontation and worse, or alternatively, the government can, by giving the unions a hand in the process of ruling the country, try and cajole them to accept restrictions on collective bargaining. He further suggests that the Heath government tried the former strategy while the succeeding Labour government tried the latter course. The analysis has already considered the experience of the Conservative's it will now analyze the experience of the Labour government.

The first point to be made is that in the period of the "Social Contract" many concessions were made to the unions. In fact union leaders openly stated that their support was given only because such measures were enacted. In particular, food subsidies were introduced, the Conservative's Industrial Relations Act was repealed, union

picketing powers were extended and rents were frozen for a year. It is of course difficult to disentangle measures the government legislated in order to gain trade union agreement from the measures it would have adopted in any case, particularly as the left wing of the Labour party was very influential at the time. It is doubtful, however, if the government would have gone so far as it did in adopting measures pleasing to the unions had it not wished for their support on the matter of controls.

Many also argue that the government allowed the unions an equally significant say in obtaining their agreement for the later stages of the policy. Some indeed have suggested that one man, Jack Jones the former leader of the Transport and General Workers Union (Britain's largest union), has in effect been the ruler of Britain for much of the period since 1974. It is he who was instrumental in designing the £6 pay policy (and the earlier "Social Contract") the later £2.50 to £4 per week policy, and who pushed most strongly for union backing of controls. It will be argued here that although there is considerable truth in this view in some respects it goes too far, and, in particular, it is ridiculous to deny that there have been other important influences on government policy than the unions in general, and Jones in particular.

The first point to be made is that the unions pressed very strongly for the NEB (National Enterprise Board), a body which they hoped would invest heavily in private industry. The Board in fact has been established, but although the unions wished for it to receive £1000m a year it has been given only £1000m over 5 years. A similar story can be told regarding planning agreements for it is apparent that the form in which they have been applied is very much weaker than that the unions wished for.

More significant perhaps is the matter of public expenditure and demand management. The unions have consistently asked that public expenditure not be cut and that expansionary measures should be introduced. The government, however, has cut public expenditure considerably (for example by £1000 million in 1975) and has been far less expansionary than the unions wished for - despite unprecedented rates of unemployment. In part, this can be attributed to the conditions demanded by the IMF for lending money to Britain (for example Healey the Chancellor of the Exchequer was forced to withdraw the £1 billion worth of tax relief he had promised the unions for their acceptance of the second stage of the wage pact), the fact is, however, that unions were prepared to accept cuts in public expenditure despite strongly worded statements against them.

Finally, although unions have pressed for a wealth tax, this had not been introduced, even though the government promised, prior to the elections of 1974 to institute such a tax. It seems that strong objections from business and other pressure groups have been sufficient to put off such a proposal in spite of both the Labour party's and the unions egalitarian instincts.

Many measures undoubtedly have been imposed which favour trade unions by the ruling Labour government and often these have been measures which large sections of the society would view with alarm (for example those regarding closed shop legislation, extensions of picketing rights). Unions however, have not been dominant in all areas of decision-making for there have been many other important influences (e.g. the IMF and the CBI) which in a number of cases have forced unions to withdraw their demands in the face of economic reality. Nevertheless Lipsey's arguments regarding the power unions can acquire in return for giving their sanction to controls are important and should not be ignored.

One measure on which the unions were decisive was in the adoption of a flat rate increase - the £6 pay limit - the first time that a pure flat rate increase had been relied upon. This, as has been pointed out before, was largely at the instigation of Jack Jones a trade union leader with strong egalitarian instincts. It is interesting to note, however, that many union leaders have found the

consequences to be against their liking (and even Jones has supported measures allowing for some measure of restoration of differentials) for example Clive Jenkins - leader of the ASTMS (Associated Scientific Technical and Managerial Staff) a while collar union - strongly attacked the effects on differentials. In fact, it is very difficult to find a union leader who does not think the £6 pay limit went too far in compressing differentials. This may imply that the movement towards successively more egalitarian periods of controls may be reversed in future periods of controls (assuming of course that there will be future periods of controls).

In this connection it should be noted that the flat rate limit has led to considerable unemployment amongst lower paid workers. Brittan and Lilley suggest that it may have raised the natural rate of unemployment by 300,000 and whilst this figure may be grossly inaccurate it is indicative of the dangers associated with interfering with the market mechanism in such a manner.

Despite the unions sometimes close liaison with the government it became increasingly clear that they would not accept any permanent form of controls. As the second phase drew to its fulfillment the cry of union leaders for a return to "orderly free collective bargaining", or "free collective chaos" as "The Economist" called it, became increasingly prevalent. The real problems, however, have

occurred more recently and the attempt to limit increases to 5% is looking increasingly like a utopian vision and some suggest the government should aim for a 15% limit (possible causes for the present explosion are an attempt to reestablish former differentials and an attempt to regain the inflated real income levels of the early part of 1975). This reinforces a conclusion reached earlier, that the unions (at least in Britain) see prices and incomes policy as something which is justifiable only as a temporary expedient and then only in certain circumstances. Unions, it seems, regard collective bargaining as their "raison d'être" and attempts to replace it are viewed with suspicion even if it means their powers will be increased in other ways. Though it is beyond the scope of the present study to deal with such matters, it is possible that unions on the continent view their "terms of reference" more widely and may be prepared to accept some permanent form of controls. It may also be the case that some countries (West Germany, Sweden) are approaching the corporate state which Lipsey for one so fears.

This chapter has dealt in some depth with the major periods of control in Britain. As a conclusion I would like to highlight a number of points which seem to be relevant concerning the various periods of control in Britain.

(1) Labour governments have been more successful than have Conservative governments in gaining union support for controls. They,

however, have not been entirely successful by any means and the longer controls are in operation the more significant has become the rift between the government and the unions.

(2) Governments of both parties have been prepared to allow the unions some say in policy making in return for wage restraint. Even when the Conservative government has not had union assent it has adopted measures favourable towards the unions, for example price controls were used by the Heath government.

(3) In many periods controls have been used as a method of obtaining a combination of fast growth rates and low inflation. This attempt has never been successful, however it is not entirely clear that the lesson has yet been learnt - although the combination of controls and restrictive demand management has been used by the present Labour government.

(4) In general controls have been so formulated as to narrow differentials (and the tendency has become more prevalent in recent years) and also have been applied more

stringently in the public than the private sector. It seems to be the case, however, that differentials will reassert themselves and that any attempts by the government to affect them, although initially popular, are in the long run doomed to failure (it should be noted however, that this may be one of the measures unions demand any policy should contain).

(5) In some periods, at least, controls may have had a significant adverse effect on profit rates. Given the capitalist system (and to an increasing extent the socialist system) is built on the profit motive this can only be seen as harmful.

(6) It is also apparent that there have been tendencies for a pre- and post-controls surge in wage rates to arise, the reasons for which have been discussed in this and other chapters. It is these which often convinced adherents of controls of the impotency of demand restraint when in fact it is really evidence of how little controls often achieve. There seems little evidence that views have changed

on this matter and "The Economist" (a weekly which expresses the views of the centre and the near centre in British politics) recently called for a wage and prices freeze as the only way to halt the slide into economic chaos.

(7) Finally, it seems unlikely that unions will ever agree to any permanent form of controls and therefore must be seen as regarding their role in wage determination as more important than any additional political power they may gain from having controls in operation. The fact that many union leaders see free collective bargaining as the best form of workers control in private industry only lends support to such a view.

Footnotes to Chapter V

1. The sources for Tables are the following: Table 1, Columns 1-4, W.A.H. Godley, Inflation in the United Kingdom, in L.B. Krause and W.S. Salant eds., "Worldside Inflation," Brookings Institution, 1977, pp. 453-473. Table 1, Columns 5-6, J. Williamson and G. E. Wood, "The British Inflation: Indigenous or Imported," American Economic Review, 66, 1976, pp. 520-531. Table 2, Organization of Economic Co-operation and Development Report on Britain (various years). Table 3, J. Cornwall, Modern Capitalism: Its Growth and Transformation, London, Martin Robertson and Co., 1977.

2. A. Jones, The New Inflation: The Politics of Prices and Incomes, London, Penguin Books and Andre Deutsch, 1972.

3. J. Mitchell, The National Board for Prices and Incomes, Secker and Warburg, 1972.

4. C. Balfour, Incomes Policy and the Public Sector, Routledge and Kegan Paul, 1972.

5. R. J. Ball and T. Burns, "The Inflationary Mechanism in the U.K. Economy," American Economic Review, 1976, Vol. 66, pp. 467-484.

6. Some have suggested the motivating factor here was the proximity of the next election. This, however, is questioned by Dow, The Management of the British Economy, 1945-60, London, Cambridge University Press, 1964.

7. D. Laidler, "Inflation in Britain: A Monetarist Perspective," American Economic Review, 1976, Vol. 66, pp. 485-500.

8. It was argued earlier that the effects of the 1949 devaluation were drawn out over a long period presumably because the "law of one price" holds, to the extent it does hold, only over the long run and because the effect that devaluation had on inflationary expectations was unimportant. The present argument is that the inflationary effects which stemmed from the influence of devaluation on expectations had receded by 1969 but because of commodity arbitrage I would still expect devaluation to have a transitory effect on the balance of payments.

9. S. Brittan and P. Lilley, The Delusion of Incomes Policy, Maurice Temple Smith Ltd., 1967.

10. R. Bacon and W. Eltis, Britain's Economic Problem: Too Few Producers, Macmillan Press Ltd., London and Basingstoke, 1976.

11. J. Johnston and M. C. Timbrell, "Empirical Tests of a Bargaining Theory of Wage Rate Determination," Manchester School, 41, 1973, pp. 141-67.

12. It should be noted that the increasing tax burden did not arise solely because the government wished to increase the share of public expenditure vis-à-vis private expenditure. The following quotation from Jackson, Turner and Wilkinson (from "Do Trade Unions Cause Inflation?") is instructive on this point: "There have been two factors in the increasing incidence of direct taxation on employment incomes. One was the effect of changes in government tax policy, the other - and on the whole the more important - has been the effect of general income increases themselves, within a direct tax system in which increments of income are taxed at successively higher rates. This has, indeed, often had the result that changes in tax scales have produced quite different actual effects to those apparently intended by the government which made them." The authors go on to argue that, although there are instances where tax rates were increased as an act of policy (particularly regarding the lower paid workers) in most cases the higher tax burden was the result of inflation in a non-indexed system.

13. R. J. Gordon, "World Inflation and Monetary Accommodation in Eight Countries," Brookings Papers on Economic Activity, 1977, No. 2, pp. 409-468.

14. M. R. Gray, M. Parkin and M. Sumner, Inflation in the U.K.: Causes and Transmission Mechanisms, Discussion Paper 7518, Manchester: University of Manchester, 1975.

15. J. Taylor, "Incomes Policy and the Structure of Unemployment and the Phillips Curve: The United Kingdom Experience, 1953-70, in M. Parkin and M. Sumner eds., "Incomes Policy and Inflation," Manchester University Press, 1972, pp. 182-200.

16. J. L. Foster, The Relationship Between Unemployment and Vacancies in Great Britain, 1958-72: Some Further Evidence, in D. Laidler and D. L. Purdy eds., "Inflation and Labour Markets," Manchester University Press, 1973, pp. 164-196.

17. R.G.D. Allen, "The Immediate Contributors to Inflation," Economic Journal, 1975, Vol. 85, pp. 607-611.

18. M. H. Miller, "Can a Rise in Import Prices be Inflationary and Deflationary?" American Economic Review, Vol. 66, 1976, pp. 501-519.

19. R. J. Gordon, opus cit.

20. R. J. Ball and T. Burns, "The Inflationary Mechanism in the U.K. Economy," American Economic Review, Vol. 66, 1976, pp. 467-484.

21. J. Williamson and G. E. Wood, "The British Inflation: Indigenous or Imported," American Economic Review, Vol. 66, 1976, pp. 520-531.

22. S. Brittan and P. Lilley, opus cit.

23. G. A. Dorfman, Wage Politics in Britain, 1945-1967, Ames, Iowa, Iowa State University Press, 1973.

24. L. Ullman and R. J. Flanagan, Wage Restraint: A Study of Incomes Policies in Western Europe, Berkeley, University of California Press, 1971.

25. J. Mitchell, The National Board for Prices and Incomes, Secker and Warburg, 1972.

26. A. Jones, The New Inflation, Penguin and Andre Deutsch, 1973.

27. An alternative explanation suggests that the freeze was accepted because people could accept the rough justice which a measure of this type brings. In the later phases of controls as more and more exemptions were permitted, this feeling of justice was lost.

28. W. Daniel, Next Stage of Incomes Policy, London, PEP No. 568, 1976.

29. M. Parkin and J. A. Carlson, "Inflation Expectations," Economica, Vol. 42, 1975, pp. 123-138.

30. The Organization of Economic Co-operation and Development produces annual reports on the economic state of a large number of countries. It is to the 1973 report on Britain the text is referring.

31. F. J. Reid, An Analysis of the Effectiveness of U.S. Wage and Price Controls and Implications for Operation of the Canadian Program, Anti-Inflation Board: Discussion Paper, 1977.

32. F. J. Reid, The Expectations Hypothesis of the Phillips Curve and the Rotation Hypothesis of Incomes Policy: Empirical Tests and Policy Implications, Doctoral Dissertation, Queen's University, Kingston, Ontario.

33. Controls are still nominally in effect at the time of writing though the 5 % target looks increasingly unrealistic. Already, the oil tanker drivers have obtained a 15 % increase and at the moment with groups such as the transport workers prepared to take industrial action in support of claims over 20 % the future of these controls looks increasingly bleak.

34. R. G. Lipsey, "Wage and Price Controls or How to do a Lot of Harm by Trying to do a Little Good," Canadian Public Policy, Winter, 1977, pp. 1-13.

CONCLUSION

Wage and price controls are argued by some to be the only way of extracting the world from the current economic malaise in which it seems to be enveloped and by others to be a dangerous option which at best is unnecessary and at worst is potentially disastrous. All too often, however, verdicts are made with little understanding of the way controls work or the results they have achieved in the past. Even when an attempt is made to examine controls themselves it is common merely to look at their role from a very narrow perspective and for this reason much that is important is neglected. This thesis has attempted to examine controls in a much wider variety of ways than is usual. This is not to say the conclusions reached are in any sense definitive, rather, that it seems to the author these are the most reasonable conclusions to draw when most aspects related to controls are considered. The conclusions are summarized below.

. The first chapter argued that a substantial portion of inflation can be explained, as the monetarists suggest, by a model which includes some measure of excess demand and an expectations variable, especially when such a model takes into account open economy considerations. It was also argued that there are important institutional reasons why the adjustment process following a reduction in demand is a long drawn out one which will involve considerable unemployment. Finally, it was suggested that trade unions may play a role

in the causation of inflation (the exact extent of which has yet to be determined), although this role does not appear, to the author at least, to be anywhere near as significant as is often suggested.

The following chapter argues, that because the costs of reducing inflation are so high and because there are substantial costs associated with inflation itself, there would seem to be a role for an extra policy tool which could be wage and price controls. Further, a model was presented in which controls were, in certain circumstances, able to lower the rate of inflation when inflation was initiated by excess demand - a result somewhat at odds with monetarist orthodoxy. However, it was also suggested that the likelihood of controls being successful (other than in a transitory way) is rather less than the model suggests and further that controls may be far less useful than is commonly supposed in ameliorating inflation to the extent that it is a cost push phenomenon.

The third chapter takes into account the existence of the costs that are associated with controls. Most of the initial portion of the chapter is concerned with the dangers of resource misallocation and it is argued these may be very important although they are less inherent in the nature of controls than is often supposed. The latter portion of this chapter deals with the long term damage controls can cause and draws heavily on an article by Lipsey. The essential

thrust is that, even if the beneficial effects of controls are enduring (a proposition which is far from self evident), the long term costs controls are likely to bring about seem sufficient to outweigh the benefits achieved (in the very long run of course demand management will achieve by itself what the combination of controls and demand management may achieve in a shorter time period).

The fourth and fifth chapters are essentially empirically orientated. The former addresses itself to an examination of the econometric evidence and concludes, that despite the variety of models used in these studies, the general tenor of the conclusions suggest the gains achieved by controls are quite small (a view which is in accordance with those of Chapters 2 and 3). The latter chapter looks in some detail at the British record and highlights, among other things, a number of the problems with which governments instituting controls have had to face. In particular, it is argued that controls have always been unpopular with the trade union movement and that this led to a constitutional crisis in 1974 and to the increasingly important influence of trade unions on economic and social policies in more recent years. Regarding the latter point, it is suggested on the one hand that the evidence does not substantiate some of the more exaggerated claims which have been made, but, on the other hand, it does indicate substantial union influence in various areas of the decision-making process. Given the seemingly small gains achieved from the use of controls this

should raise doubts about their further use, though, given the still common belief (in Britain) that these are all that prevent hyperinflation, such factors will probably be ignored.

The final verdict on controls is thus, by and large, a negative one. One possible rejoinder would be that the evidence on the benefits controls have brought leaves something to be desired and that, while controls have adverse side effects they are still necessary. It may be the case that unions would, in the absence of controls, bring about hyperinflation (though proponents of this view seem singularly unable to provide any substantiating evidence); there has, however, been little to suggest that this is the case either in Britain or anywhere else, and all too often the combination of increasing inflation rates and increasing unemployment which is supposed to refute the monetarist position can be explained quite satisfactorily in monetarist terms (e.g. in terms of a higher natural rate of unemployment or as a pre-controls wage explosion). Put at its simplest, controls have been used on a number of occasions in Britain; the verdict is hardly encouraging; it is perhaps now time to attack inflation using demand restraint alone. Looking at recent British history there is little reason to believe this will happen.

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